Between Conformity and Innovation: China's and India's Quest for Status as Responsible Nuclear Powers[1]

The most pressing question of the nuclear age, William Walker argues in his definitive work on global nuclear order, has been 'how to draw states into… *a logic of restraint*.'[2] According to Walker, '[i]nstalling and embedding this logic and rendering it tolerable have lain at the heart of the problem and project of nuclear order'.[3] In this article we examine China's and India's attempts to seek accommodation in the global nuclear order through nuclear restraint. Our core concern is to ascertain why certain Chinese and Indian restraint-based nuclear behaviours have merited outside recognition while others have not. A secondary concern centres on why China and India persist with even unrecognised practices of nuclear restraint.

In order to understand why China and India have not received recognition for the full spectrum of their restraint-based behaviours in the post-Cold War global nuclear order, and why these countries persist with these behaviours, we adopt a three-part argument. In the first part, we outline the relationship between rising powers and responsibility to situate China's and India's quest for recognition within broader strategies of status seeking as responsible nuclear powers.[4] We contend that Chinese and Indian attempts to be recognised as nuclear responsibles have operated through *conformity* and *innovation* when viewed against dominant and accepted

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[2] William Walker, Perpetual Menace: Nuclear Weapons and International Order (London: Routledge, 2011), p. 5, emphasis in original.

[3] Walker (2011), p. 5.

[4] Drawing on Bukovansky *et al*, we define a responsible nuclear power as a nuclear-armed state that objectively upholds responsibilities that 'constitute the possibilities of legitimate action' within the domain of nuclear politics – Mlada Bukovansky, Ian Clark, Robyn Eckersley, Richard Price, Christian Reus-Smit and Nicholas J. Wheeler, Special Responsibilities: Global Problems and American Power (Cambridge: Cambridge University Press, 2012), p. 81.

understandings of nuclear responsibility within the global nuclear order. In the second part, we evaluate some of the ways in which China and India have sought to *conform* to dominant norms and practices of responsible nuclear behaviour. In the third part, we show that China and India's respective claims as nuclear responsibles are based not only on conformity but also on innovation: both countries demonstrate particularistic practices of restraint that seek to mark them out as nuclear responsibles. However, these practices have not been successful in changing the norms of what it means to be a responsible nuclear state, nor have they become accepted as universal behaviours by powerful stakeholders in the global nuclear order.

Even when innovation fails to receive external recognition, however, these practices serve broader purposes for each country. For China, efforts to promote the norm of no-first use (NFU) as well as an international treaty around this pledge have contributed to useful bilateral agreements with Russia and the United States. Likewise India has gained access to civil nuclear trade by projecting a broadly benign—at least to the United States—role in the global order, helped by its innovative restraint-based nuclear behaviours. More fundamentally for both China and India, their efforts at innovation represent an important effort to signal a distinctive nuclear identity and social role in contrast to Western nuclear powers.[5]

We position our arguments within three broad strands of International Relations scholarship. First, we draw on literature on status seeking[6] in relation to rising powers. We view China's and India's quest for responsible nuclear status as both a strategy aimed at achieving

[5] Deborah Welch Larson, 'Will China be a New Type of Great Power?', The Chinese Journal of International Politics, 8:4 (2015), pp. 323–348; Kate Sullivan, 'India's Ambivalent Projection of Self as a Global Power: Between Compliance and Resistance', in: Kate Sullivan (ed.) *Competing Visions of India in World Politics: India's Rise Beyond the West* (Basingstoke: Palgrave Macmillan, 2015), pp. 15-33.
[6] Deborah Welch Larson and Alexei Shevchenko, 'Status Seekers: Chinese and Russian Responses to U.S. Primacy', International Security, 34: 4 (2010), pp. 63-95; Deborah Welch Larson, T. V. Paul and William C. Wohlforth (eds), Status in World Politics (Cambridge: Cambridge University Press, 2014); Rajesh Basrur and Kate Sullivan de Estrada, Rising India: Power and Status (Abingdon: Routledge, 2017).

accommodation within the global nuclear order, but also as a site for the projection of their identities as rising powers. Second, we engage with scholarship on responsibility[7], nuclear responsibility[8], and recognition[9] to highlight how the conferral of status as a 'nuclear responsible' in the contemporary global nuclear order centres on a specific set of observable and measurable behaviours, but also entails a process of political contestation. The Nuclear Non-Proliferation Treaty (NPT) is the key institution that lays out the responsibilities of its signatories. Yet the recognition of a state as a nuclear responsible is a politicised process, because evaluations of responsible behaviour never emerge from objective or neutral judgements. They depend, to a large extent, on the broader interests, values and perceptions of key stakeholder states within the global nuclear order. Third, we contribute to existing conceptual understandings of nuclear restraint[10] by framing our analysis around a variety of behaviours and ideas rooted in China's and India's respective histories and identities as rising powers.

We conclude that innovation is difficult, especially within rigid securitised orders dominated by a hegemonic core of states such as the global nuclear order. However, innovation offers one potential route to introduce new ideas into global governance, arguably a crucial process when

[7] Bukovansky et al (2012).
[8] Bukovansky *et al* (2012); Nicola Horsburgh, 'What does it mean to be a responsible nuclear weapons state? A conceptual study with a view to contemporary China', Unpublished paper presented at ISA annual conference (4 April 2013); Kate Sullivan, Is India a Responsible Nuclear Power? RSIS Policy Report (March 2014a) {https://www.rsis.edu.sg/wp-content/uploads/2014/07/PR140301_Is_India_a_Responsible_Nuclear_Power.pdf} accessed 5 September 2015; William Walker, 'The UK, threshold status and responsible nuclear sovereignty', International Affairs, 86:2 (2010), pp. 447-64.
[9] Philip Nel, 'Redistribution and Recognition: What Emerging Regional Powers Want', Review of International Studies, 36 (2010), pp. 951-74.
[10] Rajesh Basrur, 'Low-Profile Deterrence: Lessons from the Indian Experience,' RUSI Journal, 156:5 (2011), pp: 38-43; Malcolm Chalmers, Less is Better: Nuclear Restraint at Low Numbers, RUSI Whitehall Papers (London: Routledge, 2012); Michael Krepon, 'Uncommon strategic restraint,' Arms Control Wonk (26 August 2014) http://www.armscontrolwonk.com/archive/404250/uncommon-strategic-restraint/ (accessed 26 August 2014).

pathways are being sought towards a low-salient nuclear world. Moreover, these efforts at innovation deliver new insights into the identities and preferred social roles of rising powers.

Rising powers and responsibility in the global nuclear order

How does nuclear responsibility factor into the strategies of China and India as rising powers? Instrumentalist accounts suggest that rising powers are likely to engage in responsible behaviours in order to downplay fears that power transition in their favour will lead to conflict.[11] In other words, responsible behaviour is meant to reassure others than a rising power will not destabilise the existing global order. Social accounts frame responsible behaviour somewhat differently: as an expression of identity intended to lead to higher status. High status is conceived of not simply as a means to achieve other ends but as an end in itself: a social good.[12] In this article, we emphasise both accounts because it is not immediately clear from instrumental accounts why China and India persist with innovative nuclear restraint-based behaviours when these enjoy limited recognition. Moreover, a social account is needed because China and India themselves tend to frame their respective claims to responsible nuclear status 'socially', in terms of relative status, legitimacy and inclusion, rather than relative risk or threat.

In the quest for responsible nuclear status, we identify two distinct strategies at the disposal of states: *conformity*, defined as behaviours that align with dominant norms and practices of

[11] See, for example: James D. Fearon, 'Domestic Political Audiences and the Escalation of International Disputes', *American Political Science Review*, 88: 3 (September 1994), pp. 577-92; James D. Fearon, 'Signaling Versus the Balance of Power and Interests', Journal of Conflict Resolution, 38:2 (June 1994), pp. 236-69; James D. Fearon, 'Signaling Foreign Policy Interests: Tying Hands versus Sinking Costs', Journal of Conflict Resolution, 41:1 (February 1997), pp. 68-90.
[12] William C. Wohlforth, 'Unipolarity, Status Competition, and Great Power War', World Politics, 61:1 (January 2009), pp. 28-57, p. 35.

responsible nuclear behaviour, and *innovation*, understood as alternative norms and practices that either build on or diverge from dominant norms and practices.

A rising power's efforts at *conformity* centre upon seeking recognition on the basis of a given standard of an elite club.[13] As rising powers seek to live up to this standard, they emulate 'the values and practices of the higher-status group.'[14] In doing so, they reinforce the normative structures that underpin the standard. To the extent that China and India seek recognition of their responsible nuclear status through conformity, we see their efforts as aimed primarily at key stakeholder nuclear powers within the global nuclear order: historically the United States, Russia, France and the United Kingdom, where the role of the United States is paramount. The standard that China and India seek to meet is nuclear responsibility, a multidimensional concept whose norms and practices we expand upon below. Broadly speaking, a responsible nuclear sovereign is 'respectful of certain widely accepted norms of behaviour.'[15] The norms that regulate such responsible nuclear behaviors underpin the very fabric of the global nuclear order, where that order both seeks to ensure strategic stability[16] *and* to regulate social relations between states by constituting role identities (as responsibles or irresponsibles, among others) and conditioning what political actions are deemed legitimate.[17]

International norms and practices of nuclear responsibility are not static, but in flux: 'responsibility, like all social norms, change over time, and these structural changes are the product of social contestation, of actors challenging and revising prevailing norms.'[18] It is

[13] Nel (2010).
[14] Welch Larson and Shevchenko (2010), p. 67.
[15] Walker (2010), p. 449.
[16] Nicola Horsburgh, China and Global Nuclear Order: From Estrangement to Active Engagement (Oxford: Oxford University Press, 2015a). Horsburgh's interactive take on nuclear order, in turn, draws from Walker (2011), pp. 5-6.
[17] Bukovansky et al (2012), p. 52.
[18] Bukovansky et al (2012), p. 62.

within this space of contestation that opportunities for *innovation* may emerge. Rising power innovation in the domain of nuclear responsibility has the potential to offer alternative models of nuclear deterrence and restraint that suit the specific security needs of rising powers and that can contribute in new ways to the overall stability of the global nuclear order. Where status is concerned, innovation provides a pathway by which states can seek to 'achieve preeminence on a different ranking system' and thereby be ranked more highly, according to innovative standards, than members of elite clubs.[19]

Moreover, rising powers may also choose to pursue innovation as a strategy because they 'want to maintain distinctive identities'.[20] As we will show, China and India have both emphasised the non-coercive role of their nuclear weapons programmes, and have made claims that they practice greater restraint than Western nuclear weapons states. Doing so invokes wider discourses of solidarity with non-Western states that serve 'as a means of persuading, symbolising and euphemising claims to particular identities and social relations.'[21] Thus, beyond efforts to appeal to dominant states in the global nuclear order, China and India target their nuclear behaviour and discourse at a larger constituency of non-Western, developing states, with whom they have historically shared a post-colonial and/or anti-hegemonic normative agenda.

Seeking responsible nuclear status though conformity

In this section, we evaluate Chinese and Indian efforts to attain recognition as responsible nuclear powers through conformity with dominant norms and practices of responsible nuclear

[19] Welch Larson and Shevchenko (2010), p. 74.
[20] Welch Larson and Shevchenko (2010), p. 94.
[21] Emma Mawdsley, 'The Changing Geographies of Foreign Aid and Development Cooperation: Contributions from Gift Theory', *Transactions of the Institute of British Geographers,* 37:2, pp. 265.

behaviour. In order to do so, we need to be clear about what nuclear responsibility means. Unsurprisingly, given that nuclear restraint has been at the heart of 'the problem and project of nuclear order,' dominant norms and practices of nuclear responsibility centre on varying conceptions of nuclear restraint.

The NPT, opened for signature in 1968 and in force from 1970, remains the key legal institution within the global nuclear order that lays out the expected responsibilities of its signatories. Following its indefinite extension in 1995, the Treaty enjoys widespread adherence.[22] The NPT demands different types of responsible behaviours of nuclear and non-nuclear weapon states. For nuclear weapon states, responsible behaviour entails restraint through undefined progress towards arms control and disarmament as well as restraint in the export of sensitive nuclear technologies to non-nuclear states. For non-nuclear weapon states, responsibility rests on restraint in not developing a nuclear weapons capacity, although these states possess the 'inalienable right' to utilise nuclear energy for civilian purposes. In essence, dominant understandings of responsible behaviours based on NPT membership relate to legal obligations not to spread nuclear technology and test nuclear weapons, as well as norms of non-proliferation and non-use. These four NPT based benchmarks of nuclear responsibility offer the strongest and clearest measures for conformist responsible nuclear behaviour.

Beyond the NPT, inter-subjective ideas of nuclear responsibility may include the extent to which actors are invested in a 'duty of care' of their nuclear arsenal and/or civilian facilities.[23] Specifically, a duty of care relates to the robustness of national safety and security measures,

[22] A total of 190 parties have joined, however, North Korea announced its withdrawal in 2003, leaving 189 signatories. There are four non-signatories: India, Pakistan, Israel and South Sudan.
[23] Nicola Leveringhaus, 'Problematizing the Idea of a Responsible Nuclear Armed State: China and the Global Nuclear Order', p.12, unpublished paper, presented at International Studies Association Annual Conference (ISA) as part of a special panel on responsibility, 9 March 2013.

such as liability provisions in the event of a nuclear accident as well as the global nuclear security agenda, promoted by former US President Obama from 2010 to 2015.[24]

Declaratory nuclear doctrines and operational nuclear postures also play into assessments of how far a nuclear state can be judged as responsible. Indeed, even nuclear deterrence can contain elements of restraint, as Nina Tannenwald has shown.[25] Conceptions of nuclear deterrence vary from narrow national self-defence to an extended nuclear guarantee. The extent to which nuclear deterrence reflects restraint will depend on the strategies adopted by nuclear armed states.

These observable and measurable behaviours do not explain how, in practice, states such as China and India achieve recognition as responsible nuclear powers through conformity. To begin with, it is important to note that recognition of nuclear responsibility is not the same as recognition of *nuclear weapons status*. The latter occurs via two pathways: (1) the NPT route, available to states that have tested a nuclear weapon prior to January 1976 and subsequently retain that capability (such as China); or the non-NPT technical route, whereby a state that is not a member of the NPT (as in the case of India) tests a weapon and declares itself a nuclear weapons state. This test and declaration are scrutinised by technical experts, including those from the Comprehensive Test Ban Treaty Organisation, to verify that the yields and magnitude in question represent a technical crossing of the nuclear threshold.

[24] For example, the Nuclear Threat Initiative and the Economist Intelligence Unit offer a Nuclear Materials Security Index, rating countries worldwide, see {http://ntiindex.org/data-results/2014-findings/} accessed 2 September 2015.

[25] We are grateful to one of our reviewers for making this point. See: Nina Tannenwald, The Nuclear Taboo*:* the United States and the non-use of nuclear weapons since 1945 (Cambridge University Press, Cambridge, 2007).

Recognition of *responsible nuclear status* is a more political act. As Walker notes, in determining nuclear responsibility, 'evaluation involves an unavoidable element of subjectivity.' [26] The act of recognising a state as responsible according to dominant, intersubjective standards of nuclear responsibility depends not simply on a positive assessment of whether observable and measurable responsible behaviours have been upheld. The determination and institutionalisation of constitutive norms of responsible behaviour (what 'counts' as responsible behaviour in the global nuclear context[27]), as well as the appraisal of whether a state upholds such norms, depends on the interests, identities and broader strategies of key conferring states.[28] Indeed, the terms 'responsible' and 'irresponsible' have long served as a labelling device to praise or chastise states that accept or challenge global nuclear order.[29] As we will argue, China and India have taken numerous steps to establish their responsible status in line with dominant, intersubjective standards of nuclear responsibility, and they have been largely successful in being recognised as nuclear responsibles.

Recognition of a state's responsible nuclear status through conformity to dominant norms and practice of responsible nuclear behaviour is not automatic. Powerful stakeholder states are the prime movers when it comes to setting the constitutive terms of *what behaviour counts* as responsible, as well as *which* states can be recognised as responsibles, and even whether or not states can be *exempt* from certain established norms and practices. Indeed, India offers a critical example: US rhetoric during the controversial US-India civil nuclear agreement signed in 2008 sidestepped India's failure to embrace important non-proliferation benchmarks after its 1998

[26] Walker (2010), pp. 450–1.
[27] Nina Tannenwald, 'Stigmatising the bomb, origins of the nuclear taboo', International Security, 29:4 (2005), Spring 2005, pp. 5-49.
[28] Bukovansky et al (2012).
[29] Hugh Gusterson, 'Nuclear weapons and the other in the western imagination', Cultural Anthropology, 14:1 (1990), pp.111-113; Evan S. Medeiros, Reluctant Restraint: The Evolution of China's Nonproliferation Policies and Practices, 1980-2004 (Stanford: Stanford University Press, 2007).

nuclear tests. US recognition of India's responsible nuclear status was framed in terms of shared values—such as democracy—as well as shared economic interests.[30] Moreover, the US administration's evaluation of India's responsible status appeared to be linked to more general US perceptions of India's benevolence in the wider global order.[31]

Seeking responsible nuclear status though innovation

A strategy of innovation typically entails 'efforts to generate alternative rules/norms'.[32] However, the global nuclear order is rigidly institutionalised and its central guarantors are strongly invested in its stability. Robert Wade's study of the modes of participation available to states within regimes offers useful insights for an understanding of this rigidity.[33] The avenues for state participation in key regimes that underpin the global nuclear order, in particular the non-proliferation regime, adhere closely to Wade's mode of 'hegemonic incorporation', whereby 'the agreements are scripted by the hegemon or hegemonic core… [and] [n]ew members go along with the wishes of the dominant states'.[34] Non-proliferation and disarmament initiatives come from across the broader membership, and indeed, at the 2000 NPT Review Conference, nuclear weapon states for the first time acknowledged their responsibility to reduce their nuclear arsenals.[35] However, in general, innovation in relation to nuclear responsibility is extremely difficult to bring about unless backed by states within the hegemonic core, a position that India certainly does not occupy, given its outsider status to the NPT, and that even China, as a legally recognised nuclear weapon state, does not enjoy.

[30] Sullivan (2014a).
[31] Sullivan (2014a).
[32] Basrur and Sullivan de Estrada (2017), p. 8.
[33] Robert H. Wade, 'Emerging World Order: From Multipolarity in the G20, the World Bank and the IMF,' Politics and Society, 39:3 (2011), pp. 347-78.
[34] Wade (2011), pp. 352-3.
[35] Bukovansky et al (2012).

In order to appraise Chinese and Indian efforts at innovation, it is useful to conceive of a spectrum of benchmarks of success. We see partial success as signalled in the public discourse of key stakeholder states, where such discourse positively values markers of uniqueness or new norms of comparison.[36] Another form of partial success is explicit political support from a significant number of states in the international community, for example in a majority resolution of non-nuclear weapon states in the UN General Assembly (UNGA). Fuller success, though highly difficult to achieve, could conceivably manifest itself in eventual institutionalisation: where new norms and practices of nuclear responsibility are 'established as intersubjective social and legal norms' thereby 'tying constellations of responsibilities to socially sanctioned roles', and 'defining the terms of legitimate social and political action.'[37]

What are the barriers to success at innovation? We argue that there are material and social barriers to successful rising power innovation in relation to nuclear responsibility. While certain Chinese and Indian innovations, such as de-alerting or NFU, might appear to contribute to the overall stability of the global order, they might not be viewed as credible by others. Innovations are also unlikely to win recognition if they circumvent the NPT regime, or worse still, potentially challenge this regime, as appears to be the case with the Treaty on the Prohibition of Nuclear Weapons, passed on 7 July 2017 at the United Nations General Assembly. Hidden biases and sources of distrust may also impede recognition of innovative restraint-based nuclear behaviours. One of these biases might be cultural. For instance, Indian officials have invoked a hierarchized conception of a race-based nuclear order through references to 'nuclear apartheid' after the 1998 tests.[38] Elsewhere, Hugh Gusterson highlights a widely held perception that nuclear weapons are safer in the hands of Western, rather than

[36] Welch Larson and Shevchenko (2010), p. 69.
[37] Bukovansky et al (2012), p.64.
[38] Shampa Biswas, '"Nuclear apartheid" as political position: Race as a postcolonial resource?', *Alternatives* 26.4 (2001): 485-522.

non-Western, governments.[39] A related bias is political in nature. Distrust of non-Western democracies, together with growing fears of rising powers and what they mean for global order may also shape the thinking of powerful stakeholders. Just as India received US recognition of its responsible nuclear behaviour partly on the basis of its identity as a democracy, US suspicion of China's domestic regime may impede recognition.

Finally, uniting both interests and values, key stakeholder states in the nuclear order are all, or were once, significant powers, keen to retain an elite position in the global order. Since 'understandings and practices of responsibility play a crucial role in distributing, constraining and licensing social power',[40] the innovative nuclear behaviours that China and India claim as part of their responsible repertoire are, at core, an attempt to recast understandings of nuclear responsibility in their favour. This strategy is aimed not only at securing status as nuclear responsibles, but forms part of a broader strategy of seeking status and/or acceptance in the broader global order as rising powers. It is therefore not simply understandings of responsible nuclear behaviour that are at stake, but the relative standing of China and India compared to other nuclear powers. For this reason, stakeholder states might be reluctant to recognise innovative behaviours that cast rising powers in a 'more responsible' light.

Finally, even when presented with obstacles to external recognition, states may persist with their innovative restraint-based nuclear behaviours. One explanation for this is that the strategic cost of doing so might be low. Another is that domestic and ideational values might be attached to a particular norm or behaviour, and therefore these behaviours are part of a broader strategy to project a distinctive nuclear identity or signal a distinctive nuclear social role.

[39] Gusterson (1990).
[40] Ibid., p. 63.

Chinese and Indian strategies of conformity

From the 1990s onwards, as rising powers conscious that they pose a challenge to existing great powers, China and India have sought to offer reassurance that their rise will be peaceful and non-threatening, and have sought recognition of their positive social status as nuclear responsibles. To do so, they have stressed their *conformity* to accepted standards of responsible nuclear behaviour in the NPT and wider nuclear order, with varying degrees of success.

Chinese conformity with the global nuclear order

In the late 1970s and early 1980s, a reformist China, no longer under the leadership of Mao Zedong, became increasingly concerned with modernising its economy and 'joining the world'. In achieving these goals, improving China's international image acquired new significance. Chinese leaders Deng Xiaoping (1978-1992), and later Jiang Zemin (1993-2002), ushered the country into a period of 'reform and opening up', paving the way for China to undertake unprecedented conformist behaviour in the wider global order, as well as the nuclear order.

In the nuclear sphere, China began to display conformist behaviour by situating its views on nuclear arms control alongside UK and French positions.[41] This was particularly evident in talks over the Intermediate Nuclear Forces Treaty in the mid to late 1980s.[42] China also openly declared its support for the norm of non-proliferation, and by the early to mid-1990s issued

[41] A form of conformist behaviour might be traced even earlier to the 1960s. China acted in an unexpectedly restrained manner after testing in 1964, defying US expectations that it would be a revisionist nuclear power. Our thanks to one of the reviewers for making this point.
[42] Mohan J. Malik, 'China and the intermediate-range nuclear forces talks', Contemporary Security Policy, 10:3 (1989), pp. 235-274; Horsburgh (2015a), pp. 84-89.

various negative and positive security assurances.[43] These assurances reflected similar statements by other NPT nuclear weapon states prior to the 1995 NPT Extension Conference. Lastly, in perhaps the clearest example of conformist behaviour, China joined the NPT in 1992 and the Comprehensive Nuclear-Test-Ban Treaty (CTBT) in 1996. The former was a no-brainer for China. Having tested in 1964, Beijing was able to enjoy automatic international legal status as a nuclear weapons state within the NPT. In contrast, joining the CTBT was technically costly for China. At the time of joining, China had only conducted 47 nuclear tests, compared to 1034 conducted by the United States. China's decision to sign the CTBT was therefore a conformist move that reflected a greater degree of restraint relative to older nuclear weapons states.

This shift towards conformity is all the more dramatic when viewed in historical context. Until the mid to late 1970s, China was a vocal outsider to the global nuclear order, heavily critical of arms control and non-proliferation. Moreover, in the early to mid-1960s, China promoted what Horsburgh terms 'Socialist Proliferation', the spread of nuclear weapons to socialist states in a bid to break what China termed an imperialist nuclear monopoly.[44] The extent of Chinese aid to other countries is unclear but in the early 1990s, news reports emerged suggesting that Chinese nuclear assistance to countries like Pakistan during the Cold War had extended to the transfer of dual-use technology, fissile material and weapons designs. Further news reports followed in 2004, when the International Atomic Energy Agency discovered a Chinese nuclear warhead design from the 1960s which had travelled via the Pakistani A.Q. Khan network to

[43] Government of the People's Republic of China, China's National Statement on Security Assurances, 5 April 1995, in letter from Permanent Representative of China to the United Nations addressed to the Secretary-General of the United Nations, dated 6 April 1995, {http://www.reachingcriticalwill.org/resources/S1995-265.pdf}accessed 20 March 2011; and Government of the People's Republic of China, Statement by the Chinese Delegation on the issue of Negative Security Assurances at the 1998 PrepCom, 6 May 1998, {http://216.109.75.135/db/china/engdocs/nsa_0598.htm}accessed 20 March 2011

[44] Horsburgh (2015a), pp. 51-53.

Libya.[45] Thus, while China has certainly adopted an impressive array of conformist behaviour in the 1980s and 1990s, external concerns remain surrounding China's proliferation past. These concerns complicate Chinese attempts to demonstrate a genuine commitment to the dominant norms and practices of the global nuclear order.

Beyond concerns over China's commitment to non-proliferation, there has been little external praise of China's institutional performance within the global nuclear order, with perhaps the exception of the Six Party Talks, which China hosted from 2003 to 2008. In that instance, China was credited by international observers as playing an important and positive role.[46] Yet in other forums, such as the Conference on Disarmament, China has been labelled obstructionist in the early 2000s for frustrating efforts to negotiate a Fissile Material Cut-off Treaty.[47] China has also not ratified the CTBT it signed in 1996. But it is important not to read too much into these examples. In many ways, Chinese inaction actually reflects a much wider trend of inaction: several countries have not yet ratified (or even signed) the CTBT; and China is certainly not the only country to act in an obstructionist manner in global nuclear forums.

From the late 1990s onwards, China has continued to display conformist behaviour. In 1998, China's reaction to India and Pakistan's nuclear tests was to call for a collective diplomatic response by using the NPT as a forum for condemnation. Then, in 2004, China joined the Nuclear Suppliers Group (NSG). More recently, under former leader Hu Jintao (2003-2012) and current President Xi Jinping (2013-), China has invested in the Nuclear Security Summit

[45] 'Chinese Warhead Drawings Among Libyan Documents', Los Angeles Times, (16 February 2004). According to Albright, the design was for a Chinese warhead tested in 1966 that Pakistan had acquired from the Chinese in the early 1980s for its own nuclear weapons programme. See David Albright, 'Swiss Smugglers Had Advanced Nuclear Weapons Designs', ISIS Report (16 June 2008).
[46] Christensen (2015).
[47] Hui Zhang, 'China and a fissile material cutoff treaty', Kennedy School of Government working paper presented at the 43rd Annual Meeting of the Institute for Nuclear Materials Management (June 22-23, 2002). {https://www.belfercenter.org/sites/default/files/files/publication/inmm2002_zhang.pdf} accessed 2 April 2014.

process, including establishing a regional centre of excellence for nuclear security. China is also part of the 'P5 process' since 2008, where it leads the way in compiling an official glossary of nuclear terms, the first draft of which was presented to the 2015 NPT Review Conference. China has at times also played an important diplomatic role in attempts to resolve nuclear crises in North Korea and Iran. For instance, following North Korea's third test in February 2013, Xi Jinping put forward a tougher stance towards its neighbour. More recently, on Iran, China was a member of the P5 grouping that signed the nuclear deal in July 2015.

Indian conformity with the global nuclear

From the 1990s onwards, the accelerated growth of the Indian economy and growing external appreciation of India's democratic credentials opened up new possibilities for India to emerge as an influential player on the world stage. However, India's testing of five nuclear devices in May 1998 violated a central pillar of the NPT—the prevention of the horizontal proliferation of nuclear weapons—, thereby challenging the global nuclear order and dealing a major, though seemingly short-lived blow to India's international reputation. India has never been a signatory to the NPT, and New Delhi has consistently dismissed the Treaty as discriminatory and ineffective. In the immediate wake of the tests, a clear international consensus emerged that both India and Pakistan (who tested six nuclear devices just days after India) were pariah states: outsiders, normatively speaking, to the global nuclear order.

Indian diplomatic efforts in the wake of the 1998 tests centred on attempts to persuade key international actors, in particular the United States, that while India was now a nuclear possessor state outside the NPT, it still merited recognition as a nuclear responsible. New Delhi did not comply with demands to sign the NPT and CTBT, the central objectives of both UNSC

Resolution 1172 and of the US negotiators who co-convened a series of bilateral negotiations in the wake of the tests.[48] India did, however, voluntarily commit to the standards of responsibility expected of NPT signatories, by forgoing the proliferation of nuclear technology to non-nuclear states in accordance with Article I of the Treaty, and, since 1998, pledging and upholding a voluntary moratorium on the testing of nuclear weapons. Indian officials have repeatedly emphasised India's 'impeccable' record on the non-proliferation of nuclear materials and know-how beyond its borders.[49] India's 2005 Weapons of Mass Destruction and their Delivery Systems (Prohibition of Unlawful Activities) Act and March 2013 update of its national export control list (to fall in line with both the NSG and the Missile Technology Control Regime – MTCR – lists), sought to reassure the world that India was keen to comply with international standards on the export of dual-use items and technologies.[50] Indeed, as early as 2005, India's professed positive track record on non-proliferation beyond its borders was publicly acknowledged by the United States in a joint statement that declared India 'a responsible state with advanced nuclear technology.'[51] Non-governmental bodies, in particular the Washington-based Institute for Science and International Security, have however questioned India's proliferation credentials.[52]

In terms of national safety and nuclear security, India's nuclear security measures have received mixed reviews. On nuclear safety, the autonomy, transparency and accountability of

[48] Strobe Talbott, Engaging India: Diplomacy, Democracy, and the Bomb (Washington DC: Brookings Institution Press, 2010).
[49] Government of India, 'Ministry of External Affairs Press Statement' (11 May 1998a) (hardcopy).
[50] 'India makes changes to Dual-Use List', World ECR {http://www.worldecr.com/india-makes-key-changes-to-dual-use-list/} accessed 3 September 2015.
[51] United States Government and Government of India, 'Joint Statement Between President George W. Bush and Prime Minister Manmohan Singh', (18 July 2005) {http://georgewbush-whitehouse.archives.gov/news/releases/2005/07/20050718-6.html} accessed 2 September 2015.
[52] See, for example: David Albright, Andrea Stricker and Houston Wood, Future World of Illicit Nuclear Trade: Mitigating the Threat, (Washington, D.C.: Institute for Science and International Security, 29 July 2013) {http://isis-online.org/uploads/isis-reports/documents/Full_Report_DTRA-PASCC_29July2013-FINAL.pdf} accessed 17 February 2016.

India's nuclear regulatory system have faced criticism, both in a 2012 report by the Comptroller and Auditor General of India (CAG)[53], as well as from non-governmental bodies within India.[54] However, in March 2015, the IAEA audited India's Atomic Energy Regulatory Board (AERB) at the invitation of the Indian government, and its results were made public in what two Indian nuclear legal experts termed 'the most significant transparency efforts initiated by the AERB in recent times'.[55] Both the CAG and the IAEA pointed to the need to create an independent statutory atomic regulator, and a Nuclear Safety Regulatory Authority Bill is now under preparation, which would legally delink the AERB from the Department of Atomic Energy. On nuclear security, the (to many methodologically problematic) 2014 *Nuclear Threat Initiative Nuclear Materials Security Index* ranked India 23rd out of 25 states, with India performing particularly poorly in the areas of 'Security and Control Measures' and 'Domestic Commitments and Capacity'.[56] Nonetheless, India's domestic legislation has been brought in line with UNSC Resolution 1540, which aims to prevent the transfer of nuclear materials to non-state actors. At the international level, India has signed and ratified both the 2005 amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM) and the 2005 International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT). India also participated in all four Nuclear Security Summits, volunteering in the first to establish a Global Centre for Nuclear Energy Partnership aimed at delivering training in nuclear safety and security issues. On nuclear liability, New Delhi signed the Convention on Supplementary Compensation for Nuclear Damage in 2010 and ratified it in early 2016.

[53] Comptroller and Auditor General of India, Performance Audit on Activities of Atomic Energy Regulatory Board, Department of Atomic Energy, Report No. 9. (2012) {http://www.indiaenvironmentportal.org.in/files/file/Performance%20audit%20on%20activities%20of%20Atomic%20Energy%20Regulatory%20Board.pdf} accessed 2 September 2015.
[54] P. R. Chari, 'India's Role in the Hague Security Summit' (Washington, D.C.: Carnegie Endowment for International Peace, 18 March 2014) {http://carnegieendowment.org/2014/03/18/india-s-role-in-hague-nuclear-security-summit} accessed 2 September 2015.
[55] M. P. Ram Mohan and Els Reynaers Kini, 'India's nuclear regulators have been audited', The Hindu Business Line (3 January 2016) {http://www.thehindubusinessline.com/opinion/indias-nuclear-regulators-have-been-audited/article8061473.ece} accessed 15 August 2016.
[56] NTI Nuclear Materials Security Index (2014).

Overall, India is making considerable efforts to strengthen its nuclear security architecture in line with global norms.

In terms of the outside recognition of India, less than a decade after the 1998 tests, the exceptional civil nuclear deal signed between Washington and New Delhi (announced on 18 July 2005, signed on 2 March 2006, and concluded on 10 October 2008) and the 2008 NSG waiver that permitted its operationalisation, have signalled a partial accommodation of India within the global nuclear order: India has now signed bilateral civil nuclear trading agreements with France, Russia, Mongolia, Namibia, Argentina, Canada, Japan, Kazakhstan, South Korea and Australia. While India remains formally outside the NPT, with no clear prospect[57] for its inclusion within, or accession to, the Treaty, India's quest for membership in multilateral regimes linked to the non-proliferation regime demonstrate that New Delhi is seeking an institutionalised place and insider status within the global nuclear order.[58] With US support for India's 'phased entry' into these regimes, as a means to 'strengthen global nonproliferation and export control regimes,'[59] India joined the MTCR in mid-2016 and the Wassenaar Arrangement in late-2017. India's membership in the Australia Group will likely follow, however admission to the NSG is more contentious, with Chinese opposition standing as a major obstacle. On the whole, there is no international consensus on whether India is a nuclear

[57] The legal status of a Nuclear Weapon State (NWS) under the NPT can only be afforded to a state that has tested a working nuclear device prior to 1 January 1967. The alternatives for India include: a) surrendering its nuclear status and joining the NPT as a non-nuclear state; b) remaining, as it currently does, outside the NPT; or c) amendment of the NPT to include India. Of these three options, the first and third are extremely unlikely.
[58] Rajesh Rajagopalan, 'Shoring up the non-proliferation regime: the view from India' in Lora Saalman (ed.), The China-India Nuclear Crossroads (Washington DC: Carnegie Endowment for International Peace, 2012), pp. 121-26.
[59] US Government and Government of India, 'U.S.-India Joint Statement – "Shared Effort; Progress for All"' (Washington, D.C.: The White House**,** Office of the Press Secretary, 25 January 2015) {https://www.whitehouse.gov/the-press-office/2015/01/25/us-india-joint-statement-shared-effort-progress-all}, accessed 15 August 2016.

responsible: demands for India to accede to the NPT persist, and China has been particularly critical of the legitimacy of India's indeterminate nuclear status in the global nuclear order.[60]

In summary, how do China and India measure up to the dominant benchmarks of nuclear responsibility that underpin the global nuclear order? At an institutional level, China has engaged in more conformist behaviour than India by joining major institutions like the NPT, CTBT and NSG. India remains outside key nuclear institutions such as the NPT and CTBT, although it is seeking membership of the NSG. At a normative level, India is not tainted by a poor historical record on proliferation. Yet, formally and legally speaking, India is conspicuously non-conformist since it has not signed the NPT, even though can claim *de facto* compliance with the NPT since 1998.

Chinese and Indian strategies of innovation

Innovation entails efforts to build on or diverge from dominant norms and practices of nuclear responsibility. We conceive of two types of partially successful recognition: the discursive positive valuation of innovative behaviours by stakeholder states, and/or explicit political support by a significant number of non-stakeholder states. Fully successful recognition results from the social and legal institutionalisation of such innovations, which requires the support of stakeholder states. In this section, we outline and evaluate the degree of recognition of China and India's innovative nuclear behaviours since the 1990s. China and India base their claims as nuclear responsibles not simply on their conformity to dominant understandings of nuclear

[60] Nicola Horsburgh, 'Chinese Views of a Nuclear India: From the 1974 Peaceful Nuclear Explosion to the Nuclear Suppliers Group Waiver in 2008', in Kate Sullivan (ed.), Competing Visions of India in World Politics: India's Rise Beyond the West (Basingstoke: Palgrave Macmillan, 2015b), pp. 34-48.

responsibility and restraint, but also on responsible nuclear behaviours that centre on their respective particularistic forms of nuclear restraint, many of which are not tied to the NPT.

Chinese innovation in the global nuclear order

Chinese forms of responsible innovation are based on three notions of restraint, with conceptual and operational characteristics. Conceptually, China offers non-conformist thinking on nuclear deterrence, and holds the longest-standing NFU pledge among nuclear-armed states. China also promotes an international NFU treaty. Operationally, China reflects restraint through minimalism in numbers and the de-alerting of its forces. However, these forms of innovation are not without their controversies, and their acceptance by others has been mixed at best.

Conceptually, China has long regarded nuclear deterrence as a term negatively connoted with coercion. Throughout the Cold War, China was the only nuclear weapon state to openly reject nuclear deterrence and the notion of Mutual Assured Destruction that became mainstream thinking in the 1960s and 1970s. Chinese leaders labelled nuclear deterrence incompatible with NFU and self-defence.[61] Even as late as 1996, Chinese Foreign Minister Qian Qichen stated that 'China does not endorse the policy of nuclear deterrence'.[62] Yet China's blanket anti-nuclear deterrence stance began to unravel in the early 1990s. An important factor in this unravelling relates to China's decision to normalise its relationship with important global nuclear institutions such as the NPT in 1992 and the CTBT in 1996. Finally, in 2000, China integrated, for the first time ever, the term nuclear deterrence into its defence white paper. However, despite featuring in the white paper, Chinese experts such as Wu Riqiang continue

[61]Author interviews, Beijing, 16 July 2011 and Shanghai, 28 September 2013 in Horsburgh (2015a).
[62] Qichen Qian, full statement of the Chinese Foreign Minister at the 51st Session of the United Nations General Assembly on 25 September 1996, reprinted in Beijing Review, 42 (14 October 1996).

to highlight the inadequacies of the term.[63] For leading scholar Li Bin, 'counter-coercion' (*fanhe weiya)* remains a far more suitable term than nuclear deterrence in describing the distinctive conceptual basis of China's nuclear restraint.[64]

A second example of non-conformist thinking is China's NFU pledge. This pledge represents the cornerstone of Chinese nuclear restraint claims. Other nuclear weapon states have promoted NFU: USSR/Russia maintained NFU from 1982 to 1993,[65] India has a conditional pledge since 2003,[66] and North Korea reportedly supports NFU. Yet China is the only nuclear weapon state to have maintained an unconditional NFU pledge since testing a nuclear weapon in 1964.

Initially, with NFU, China sought to reassure the region as well as non-nuclear states in the developing world that China's nuclear status did not represent a threat and that nuclear weapons were predominantly a political weapon. Yet since the 1990s, an internal debate over NFU has attracted outside attention. External suspicions have gained further ground following unofficial remarks by Chinese diplomat Sha Zukang in 1996 and Major General Zhu Chengdu of China's National Defence University in 2005 over whether the pledge would apply to Taiwan.[67] These comments have been taken as evidence that China's military does not intend to be constrained by NFU in the event of a crisis. More recently, NFU was absent from China's defence white

[63] Riqiang Wu, 'Certainty of Uncertainty: Nuclear Strategy with Chinese Characteristics', Journal of Strategic Studies, 36:4 (2013), pp. 14-15.
[64] Li Bin, 'China's Potential to Contribute to Multilateral Nuclear Disarmament," Arms Control Today, March 2011{https://www.armscontrol.org/act/2011_03/LiBin} accessed 2 October 2011; Li Bin and Tong Zhao, eds., *Understanding Chinese nuclear thinking* (Washington D.C.: Carnegie Endowment for International Peace, 2016), pp. 9-10.
[65] Nikolai Sokov, 'Why do states rely on nuclear weapons? The case of Russia and beyond', The Nonproliferation Review, 9: 2 (2002), pp. 101-111.
[66] For a comparison of China and India's NFU, see Li Bin and Srikanth Kondapalli, 'Revisiting No First Use and Minimum Deterrence, the view from China, and the view from India', in Saalman (2012). On NFU during the Cold War, see Lawrence Weiler, 'No First Use: A history', Bulletin of Atomic Scientists, 39: 2 (1983), pp. 28-34.
[67] Stephanie Lieggi, 'Going beyond the Stir: The Strategic Realities of China's No-First-Use Policy', Center for Nonproliferation Studies, 2005.

paper in 2013.[68] Chinese officials immediately reassured the international community that NFU remained firmly in place, yet Chinese military writings have also toyed with the idea of developing a future launch-on-warning capability, which might complicate NFU.[69] In sum, these internal discussions and external dismissals have tarnished NFU as marker of Chinese nuclear restraint. However, by continuing to publicly and proudly reinforce its pledge of NFU, China holds itself to public account. Should Beijing ever decide to openly abandon NFU, there would likely be reputational costs to such a decision. So, while NFU might be a 'cheap' form of restraint in the eyes others, for a resurgent China it may be politically costly to abandon.

China's pursuit of NFU should also be viewed in institutional context. Since the mid-1990s, Chinese diplomats had been lobbying nuclear institutions such as the United Nations Institute for Disarmament Research to promote an international NFU treaty.[70] Chinese actions in this regard—taking place largely behind closed doors—represent an important attempt to innovate at an institutional level outside the NPT in the global nuclear order. Crucially, in 2004, a Chinese Foreign Ministry open-source fact sheet announced publicly that in 1994, China had privately presented a draft text for a Treaty on the No-First-Use of Nuclear Weapons to the United States, Russia, France and the United Kingdom.[71] According to Zhou Bo, an honorary fellow of the PLA Academy of Military Sciences, the draft was not welcomed by the other

[68] James Acton, 'Debating China's No-First-Use Commitment: James Acton Responds', Proliferation Analysis, Carnegie Endowment for International Peace (22 April 2013). Shortly after the white paper was released, Pang Sen, Director General of the Department of Arms Control in the Chinese Ministry of Foreign Affairs, re-affirmed NFU – 'Statement by Pang Sen at the UNGA High-Level Meeting on Nuclear Disarmament' (26 September 2013) {http://www.fmprc.gov.cn/mfa_eng/wjb_663304/zzjg_663340/jks_665232/kjfywj_665252/t1100312.shtml} accessed 1 August 2016.

[69] Gregory Kulacki, 'The Chinese Military Updates China's Nuclear Strategy', Union of Concerned Scientists (March 2015) {http://www.ucsusa.org/sites/default/files/attach/2015/03/chinese-nuclear-strategy-full-report.pdf} accessed 20 April 2015.

[70] Based on interviews conducted by the author in Monterey, 6 December 2011 (Horsburgh 2015a), p. 106.

[71] Chinese Ministry of Foreign Affairs, 'Fact Sheet: China: Nuclear Disarmament and Reduction of, 27 April 2004 {https://fas.org/nuke/guide/china/doctrine/fs042704.pdf }accessed 11 April 2017.

nuclear weapon states because of verification concerns surrounding de-targeting.[72] Undeterred, academic sources suggest that Beijing proposed including a reference to NFU in the Preamble to the CTBT signed in 1996.[73] Although this reference was not included, and the draft treaty text rejected, China continued into the 2000s to call for an international treaty on NFU, a stance reflected in the Chinese scholarly discourse.[74] For instance, Wu Jin, of the Beijing Institute of Applied Physics and Computational Mathematics, argued in a 1998 conference paper in support of a NFU treaty as a step towards global nuclear disarmament.[75] Then, in 2004, China openly called again for nuclear weapon states to, in a 'legally binding format, unconditionally undertake not to be the first to use nuclear weapons'.[76]

There are a number of reasons why China's attempts at forging international consensus over an NFU treaty have failed. Where key stakeholder state interests are concerned, there is a clear strategic rationale for not supporting such a treaty. A NFU pledge would likely complicate extended nuclear arrangements held by the other four NWS.[77] As Michael Krepon notes, first-use within extended security commitments offers political reassurance and military credibility to allies.[78] Nina Tannenwald also points to US extended deterrence obligations in explaining why the US has resisted institutionalisation of a no-first-use commitment.[79] Indeed, the NATO chapter five commitment includes a first-use nuclear guarantee extended to allies by the United

[72] Zhou Bo, 'New Consideration of China's No-First-Use of Nuclear Weapons is Needed', 7 June 2016, China-US focus {http://www.chinausfocus.com/peace-security/new-consideration-of-chinas-no-first-use-of-nuclear-weapons-is-needed} accessed 11 April 2017.
[73] Nicola Butler and Young, Stephen. "New Text for a Comprehensive Test Ban Treaty", Occasional Papers on International Security Policy, 30 May 1996, Number 18.
[74] Interviews with Chinese and foreign officials in Beijing, June 2010, and in Monterey, October 2011 in Horsburgh (2015a).
[75] Wu Jun, 'On No-First-Use Treaty', Sixth ISODARCO Beijing Seminar on Arms Control, October-November 1998 {http://nautilus.org/wp-content/uploads/2015/07/Wu_JunISODARCO2.pdf } accessed 11 April 2017.
[76] Permanent mission of the People's Republic of China to the United Nations Office at Geneva and other International Organizations in Switzerland, 'China's position on nuclear disarmament', 16 April 2004, {http://www.china-un.ch/eng/cjjk/cjjblc/cjlc/t85390.htm}accessed 11 April 2017.
[77] The authors thank [redacted] for making this point.
[78] Michael Krepon, 'Alliances and no first use', Arms Control Wonk (5 July 2016) {http://www.armscontrolwonk.com/archive/1201550/alliances-and-no-first-use/} accessed 1 August 2016
[79] Tannenwald (2005), p. 32.

States and the United Kingdom (as well as a reluctant France). A NFU treaty thus seems incompatible with a world in which extended nuclear commitments exist. NFU has also encountered strong resistance at a domestic level in all four nuclear weapon states. In France, there has been a consistent rejection of NFU in its nuclear policy.[80] Russia shows no signs of reverting back to its former NFU pledge.[81] In the UK, Parliament debated NFU in the 1980s, and the much respected senior civil servant, the late Sir Michael Quinlan, consistently rejected NFU as a pledge in UK nuclear policy, labelling it dangerous.[82] In the United States, there have been debates over NFU and de-alerting throughout the 1990s and 2000s but these have failed to result in any official policy change.[83]

Even though the NFU treaty has failed, China continues to promote NFU. Above all, the pledge has become inextricably linked to Chinese self-identity as a different type of nuclear weapons state in the global nuclear order. NFU has essentially become a crucial aspect of China's public nuclear diplomacy. China's promotion of a NFU treaty has also afforded strategic gains elsewhere. One the one hand, it is likely that China's persistent NFU commitment binds India to its own. On the other hand, and more concretely, in September 1994, Chinese and Russian leaders declared a mutual commitment to NFU and non-targeting. Then, in 2001, a formal bilateral NFU commitment was signed as part of the Treaty of Good-Neighbourliness and Friendly Cooperation between China and Russia. This treaty formally committed both states not to be 'the first to use nuclear weapons against each other nor target strategic nuclear missiles against each other'. This remains the only formal bilateral NFU commitment between two

[80] Bruno Tertrais, 'The Trouble with No First Use', Survival, 51: 4, (2009), pp. 23-27.
[81] Nikolai Sokov, 'The Evolving Role of Nuclear Weapons in Russia's Security Policy' in William C. Potter and Cristina Hansell, eds., Engaging China and Russia on Nuclear Disarmament, CNS Occasional Paper 15, (April 2009), pp. 76-77.
[82] Tanya Olgivie White, On Deterrence: Correspondence with Michael Quinlan (IISS: London, 2012).
[83] Brad Roberts, The Case for U.S. Nuclear Weapons in the 21st Century (Stanford: Stanford University Press, 2015).

nuclear weapon states in the global nuclear order.[84] A de-targeting only agreement was also signed between China and the United States in 1998, and universal de-targeting agreement among the five nuclear weapon states in 2000. More recently, some Chinese experts have proposed an explicit agreement between China and the United States that commits each party not to use nuclear weapons in the Taiwan Strait if such a conflict were to occur.[85] In other words, what these bilateral agreements show is that while China's original attempt at innovation on NFU failed, it indirectly led to unexpected successes elsewhere.

A third example of Chinese innovation is operational. China has been modernizing its nuclear forces since the 1990s, and reports have suggested China has improved its land based nuclear missiles by introducing mobile platforms with the DF-31A, as well as a new longer range missile, the DF-41, and deploying, for the first time ever, multiple warheads (MIRVS). [86] Yet even with these capabilities, China's nuclear force remains small and de-alerted. Compared to thousands of (multiple and alerted) nuclear warheads in the United States and Russia, China has less than 300 nuclear warheads and only one reliable platform for its nuclear forces, namely land based missiles (including a range of ICBMS: DF-5 DF-31A, and possibly DF-41).[87] Beyond land based forces, relative to United States and Russia, China's sea platform of nuclear armed submarines is incomplete, with no deep-sea patrol experience.[88]

[84] Treaty of Good-Neighbourliness and Friendly Cooperation Between the People's Republic of China and the Russian Federation, July 16, 2001, Chinese Foreign Ministry {www.fmprc.gov.cn/eng/wjdt/2649/t15771.htm} accessed 20 January 2016.
[85] These calls are made in track two dialogues between the United States and China. See Conference Report on: 'U.S.-China Strategic Nuclear Dynamics', 9-10 June 2008, held in Beijing, China, organised by the RAND Corporation, and China Foundation for International & Strategic Studies (CFISS).
[86] Other nuclear weapon states have MIRVS. See Jeffrey Lewis, 'Great, Now China's Got Multiple Nuclear Warhead Missiles? But what looks like a scary arms race with Washington may not be what it seems', Foreign Policy (26 May 2015).
[87] Hans Kristensen and Robert Norris, 'Chinese nuclear forces 2016', Bulletin of the Atomic Scientists, 72:4, (2016), pp. 205-211.
[88] A recent report has suggested that China will deploy nuclear armed submarines in the Pacific but with no clear timeframe; see: Julian Borger, 'China to send nuclear-armed submarines into Pacific amid tensions with US' The Guardian (26 May 2016) {https://www.theguardian.com/world/2016/may/26/china-send-nuclear-armed-submarines-into-pacific-us} accessed 26 May 2016.

China's low-reliance on nuclear weapons within its broader military strategy, together with its minimalist approach towards the size of its nuclear arsenal, can be traced as far back as the Maoist period, when nuclear weapons were labelled 'paper tigers'. Later, in the reform era, Deng Xiaoping stated in 1978 that 'we also want to build some nuclear weapons but we are not preparing to make many. When we have the power to counterattack, we won't continue to develop them'.[89] In the 1990s and 2000s, this thinking remains relevant. Chinese nuclear experts such as Sun Xiangli[90] and Xia Liping[91] have labelled China's minimalist approach one of 'utmost restraint'. Critics might argue that the problem with this particular form of restraint is that despite the low numbers, China is increasing its nuclear arsenal – as noted above with the MIRVs. Yet Chinese officials have sought to emphasise that these changes do not undermine restraint because the intention is *not* to match the size and scope of nuclear forces in the United States and Russia. In other words, China's decision to eschew parity with larger nuclear weapons states reflects restraint.

Indian innovation in the global nuclear order

In related, though distinctive, ways, India too draws on particularistic conceptions and practices of nuclear restraint in attempts to bolster its status as a nuclear responsible. India's 'responsible innovations' have conceptual, declaratory and operational dimensions, and India has made multilateral efforts to propose new norms of nuclear responsibility.

[89] Cited in M.Taylor Fravel and Evan Medeiros, 'China's Search for Assured Retaliation, the Evolution of Chinese Nuclear Strategy and Force Structure', International Security, 35:2, (2010), p. 64.
[90] Xiangli Sun, 'Zhongguo he zhanlue xingzhi yu tedian fenxi', [China's Nuclear Strategy: Nature and Characteristics] Shijie jingji yu zhengzhi [World Economics and Politics] 9, (September 2006), pp. 23-29.
[91] Liping Xia, 'Lun Zhongguo he zhanlue de yanjiang yu goucheng', [On the structure and evolution of China's nuclear strategy] *Dangdai yatai* [Contemporary Asian Pacific] 4, (2010), pp. 124-5.

Conceptually, almost all of India's leaders since independence have in some way framed control over the development and management of nuclear weapons with reference to 'internal restraints' and 'ethical limits', in implied (and sometimes explicit) contradistinction to the nuclear postures of existing nuclear weapon states.[92] Key sections of India's political elite initially presented nuclear restraint in terms of a complete material renunciation of an immoral nuclear weapons programme. Indeed, India's 1974 'Peaceful Nuclear Explosion' (PNE) was officially framed in this light: India's 'peaceful' atomic capabilities and the subsequent decision not to weaponize were cited as evidence of India's commitment to nuclear restraint.[93] Later restraint claims related to the decision not to develop nuclear weapons until the 1980s, and not to test them until 1998.[94] The discourse of restraint, though evolving, has been so central and enduring that Indian government statements following the five 1998 nuclear tests took care to redefine restraint in line with India's newly weaponised status: restraint shifted away from non-possession to focus on non-use and minimalism.[95] Indian nuclear policy elites pledged that nuclear weapons would not be used as instruments of coercion, and emphasised that India's doctrine was not predicated on nuclear war. Then-Prime Minister Vajpayee was explicit that India had 'no intention of engaging in a nuclear arms race'. [96] The intended contradistinction between India and the established nuclear powers was clear: Jasjit Singh of the National Security Advisory Board, claimed that India stood 'in contrast to the

[92] Kate Sullivan, 'Exceptionalism in Indian Diplomacy: The Origins of India's Moral Leadership Aspirations', South Asia: Journal of South Asian Studies, 37:4 (2014b), pp. 640-55.
[93] Ashis Nandy, 'Between Two Gandhis: Psychopolitical Aspects of the Nuclearization of India', Asian Survey, 14:11 (1974), pp. 966-70.
[94] Itty Abraham, 'Contra-proliferation: Interpreting the Meanings of India's Nuclear Tests', in Scott D. Sagan (ed.), Inside Nuclear South Asia (Stanford: Stanford University Press, 2009), pp. 106-32.
[95] Government of India, Ministry of External Affairs Press Statement (11 May 1998a) (hardcopy); Government of India, 'Evolution of India's Nuclear Policy', *India News* (May 16 – June 15 1998b), pp.3-6; Jaswant Singh, 'Against Nuclear Apartheid', Foreign Affairs, 77:5 (September/October 1998), pp. 41-52.
[96] Atal Bihari Vajpayee, cited in: David J. Karl, 'Lessons for Proliferation Scholarship in South Asia: The Buddha Smiles Again', Asian Survey, 41:6 (2001), pp. 1002-22, p. 1009.

acknowledged wisdom of the main nuclear powers', and was seeking 'to chart a new path'.[97] Innovation is at the centre of such claims.

India's current declaratory nuclear policy includes a (qualified) commitment to NFU. New Delhi formally declared a unilateral NFU posture and a policy of non-use against non-nuclear-weapons states in December 1998, both of which were carried over to India's 1999 'draft nuclear doctrine'. Declared official policy in 2003, the doctrine, which has not been publicly updated or revised since, reiterates the posture of NFU, but with two qualifications relating, first, to the nuclear targeting of Indian troops, wherever they may be deployed (for example, in the event that China to attack Indian forces stationed within its claimed territory in Arunachal Pradesh) and second, to the targeting of India through a biological or chemical weapons attack.[98] This has led to criticism that these qualifications undermine the absoluteness of India's NFU policy, and, also, that such a policy does not preclude a conventional attack, leading to a detonation, on nuclear forces in, for example, Pakistan.[99] Indeed, in early 2017 debate circulated among scholars and experts both in the United States and India over the possibility that India was shifting from a counter-value doctrine to a counterforce doctrine, thereby potentially moving away from NFU in strategy.[100] Nonetheless, India's commitment to NFU remains part of the country's official declared doctrine and thus one of the key restraint-based messages that its officials seek to project. Moreover, NFU can be considered a contribution to

[97] Jasjit Singh, Indian Draft Nuclear Doctrine: Some Reflections, Pugwash Reports (September 1999) {http://www.pugwash.org/reports/nw/nw7.htm} accessed 16 November 2012.
[98] Some commentators doubt the credibility of an Indian nuclear response in such a case, see: Rahul Roy-Chaudhury, 'India's Nuclear Doctrine: A Critical Analysis', Strategic Analysis, 33:3 (2009) pp. 404-14.
[99] Vipin Narang, 'Five Myths about India's Nuclear Posture', The Washington Quarterly, 36:3 (2013), pp. 143-57; Scott D. Sagan, 'The Evolution of Pakistani and Indian Nuclear Doctrine', in Scott D. Sagan (ed.), Inside Nuclear South Asia (Stanford: Stanford University Press, 2009), pp. 219-64.
[100] Vipin Narang, 'Plenary: Beyond the Nuclear Threshold: Causes and Consequences of First Use', Carnegie International Nuclear Policy Conference, Washington, DC (20 March 2017) {https://southasianvoices.org/sav-dc-nukefest2017-potential-indian-nuclear-first-use/#sthash.o1E9TvPW.dpuf} accessed 10 April 2017; Dhruva Jaishankar, 'Decoding India's Nuclear Status', The Wire (3 April 2017) {https://thewire.in/120800/decoding-india-nuclear-status/} accessed 10 April 2017.

nuclear stability in the region, since, as Shashank Joshi argues, 'first use doctrines are highly destabilising, giving each side an incentive to pre-empt the other'[101]. Joshi does however qualify this assessment with the observation that Pakistan does not take India's NFU pledge seriously, meaning that NFU may only have stabilising value vis-à-vis China.[102]

Operationally, India claims to seek only 'minimum credible deterrence' through its nuclear forces, however India's nuclear doctrine does not clearly state, either numerically or substantively, what exactly this means.[103] Rajesh Basrur describes the Indian perception of a minimum deterrence doctrine as one where 'deterrence strategy is in place with few weapons, with weapons of relatively little variety and sophistication, and with weapons that are not deployed or even assembled'.[104] Certainly, India has a smaller arsenal even than China, estimated at 120 to 130 nuclear warheads.[105] However, India's preoccupation with improving its delivery systems and its operation of seven nuclear capable systems spanning air land and sea, with at least four more systems in development, raises questions about its minimum deterrence doctrine.[106] India's nuclear strike force centres on a flexible air-based capability of fighter-bombers based in three locations and sufficient to target Pakistan and parts of China, as well as four land-based missiles including the short-range Prithvi-2 and Agni-I; the medium range Agni-II; and the intermediate-range Agni III, with the longer range Agni IV and V still under development.[107] On sea, a ship-launched ballistic missile, the Dhanush, has been

[101] Shashank Joshi, 'India's nuclear doctrine should no longer be taken for granted', The Interpreter, Lowy Institute for International Policy (22 March 2017) {https://www.lowyinstitute.org/the-interpreter/indias-nuclear-doctrine-should-no-longer-be-taken-granted}, accessed 10 April 2017.
[102] Joshi (2017).
[103] Shashank Joshi and Frank O'Donnell, 'India's nuclear choices', The Times of India (23 April 2012) {http://articles.timesofindia.indiatimes.com/2012-04-23/edit-page/31382817_1_nuclear-deterrence-nuclear-intentions-minimum-deterrence} accessed 17 February 2016.
[104] Rajesh Basrur, Minimum Deterrence and India's Nuclear Security (Stanford: Stanford University Press, 2006), p. 53.
[105] Hans M. Kristensen and Robert S. Norris, 'Indian Nuclear Forces, 2017', Bulletin of the Atomic Scientists, 73:4 (2017), pp. 205-209.
[106] Basrur (2006), p. 53; Kristensen and Norris (2017).
[107] Kristensen and Norris (2017).

successfully tested but has a short range (400 km), while India's first indigenously built nuclear-powered ballistic missile submarine, INS Arihant, is still undergoing sea trials.[108]

Like China, India has de-alerted its nuclear forces: India's warhead components are kept separately, and are stored away from their delivery systems.[109] India has not yet developed the capacity for its missiles to carry MIRVs, although the Agni-VI missile currently under development will purportedly possess the capacity to deliver MIRVs. If India's emphasis on credibility and survivability result in a serious expansion of India's arsenal and a move to the deployment of its warheads, then this will clearly signal a significant deviation from the declared posture of minimum credible deterrence.[110] Some commentators view such a trajectory as near-inevitable, and indeed already underway, for example through the likely arming of the INS Arihant with a nuclear capable missile. However, at the level of the political leadership and India's diplomatic elites, the official position remains that India has neither significantly expanded its arsenal nor moved away from a non-deployed posture. Moreover, India's nuclear modernization, which once centred primarily on deterring Pakistan, now appears aimed at China, too, providing one justification for the seeming flexibility of India's conception of 'minimum deterrence'.[111] Overall, India's claims about its restrained posture are part of its status-seeking strategy as a nuclear responsible. Major shifts away from its 2003 nuclear doctrine would be controversial and draw unwelcome criticism and, potentially, a downgrade in India's status as a responsible nuclear power.

[108] Kristensen and Norris (2017).
[109] Basrur (2006), p. 44.
[110] Basrur (2006), p.171.
[111] Narang (2017).

Multilaterally, even after the 1998 nuclear tests, India has continued its decades-long advocacy for universal disarmament.[112] For over three decades, India has sponsored a resolution calling on the First Committee of the UN Conference on Disarmament to negotiate a Convention on the Prohibition of Use of Nuclear Weapons.[113] Since the 1998 tests, both at the Conference and through prime ministerial statements, India has also called for a global NFU norm.[114] However, of significance for understanding both the limits to and deeper purpose of India's efforts at innovation through multilateral forums, is India's annual sponsorship of a resolution at the United Nations Conference on Disarmament entitled 'Reducing Nuclear Danger', which emphasises the risks associated with the current operational status of nuclear weapons, urges the review of nuclear doctrines, and recommends the implementation of measures to prevent the accidental launch of nuclear weapons related to computer or technical errors.

Piloted by India in 1998, following its nuclear tests, and renewed annually, including again in 2016, the 'Reducing Nuclear Danger' resolution's recommendation for the de-alerting of nuclear arsenals calls specifically on the five nuclear weapon states to adopt such measures and makes critical reference to the 'hair-trigger alert' of nuclear weapons. By singling out these states to review their nuclear doctrines, critics point to 'India's questionable sincerity in sponsoring such a resolution, as neither India nor Pakistan have the technology yet for hair-trigger alert.' [115] The resolution has faced persistent opposition, primarily from NATO

[112] Informal Group on Prime Minister Rajiv Gandhi's Action Plan for a Nuclear-Weapons-Free and Non-Violent World Order 1988 (20 August 2011) {http://gsinstitute.org/wp-content/uploads/s3/assets/gsi/docs/RGAP.pdf} accessed 2 September 2015. Manmohan Singh, 'Inaugural Address by Dr Manmohan Singh, Prime Minister of India on "A Nuclear Weapon-Free World: From Conception to Reality"', (2 April 2014) {http://www.pugwashindia.org/Article_detail.aspx?id=440} accessed 10 April 2017.
[113] Government of India, 'Statement by Ambassador Venkatesh Varma India's Permanent Representative to the CD on Negative Security Assurances' (9 July 2014) {http://meaindia.nic.in/cdgeneva/?3454?001} accessed 10 April 2017.
[114] Government of India, 'India Working Paper: Nuclear Disarmament', CD/1816, 20 February 2007 {https://documents-dds-ny.un.org/doc/UNDOC/GEN/G07/604/46/PDF/G0760446.pdf?OpenElement}, accessed 10 April 2017, pp. 4-5; Singh (2014).
[115] '2007 First Committee Resolutions', The Acronym Institute (2007) {http://www.acronym.org.uk/old/archive/un/07unnuc.htm} accessed 11 April 2017.

members and European states, including France, the UK, and the United States, with China and Russia abstaining.[116] However, the resolution has also enjoyed consistent support across the majority of the membership of the Non-aligned Movement (NAM. That this may be a primary goal of India's is suggested by the fact that the annual resolution has remained largely unchanged, and according to one source, 'appears stale for failing to break past the easy goal of passing by appealing solely to the NAM majority, without any true effort to move the issue forward or seek broader support.'[117]

There are key interest-based reasons why the United States and Russia remain particularly resistant to de-alerting, and to recognising India's innovation in this regard. These two countries, in particular, continue to rely on a notion of nuclear deterrence that views high-alert postures as essential.[118] They possess 95 per cent of the world's nuclear weapons. China's nuclear weapons are de-alerted, and France and the UK have made 'conscious decisions not to maintain ground-based launch-ready nuclear forces,' despite also deploying 80 and 48 fully operational submarine-based nuclear weapons, respectively, although at a lower readiness level than Russian and US forces.[119] De-alerting is thus not an acceptable option for these states for perceived strategic and political reasons.[120]

India's 'big picture' innovation (and its most successful) has come in the form of securing recognition as a nuclear responsible from key (though not all) states in the global nuclear order

[116] Anna Langenbach and Jean du Preez, 'UN General Assembly Tackles Nonproliferation and Disarmament After Disappointing Summit', Nuclear Threat Initiative (1 December 2005) {http://www.nti.org/analysis/articles/un-general-nonproliferation/} accessed 11 April 2017; Kalyan Kemburi and Jean du Preez, 'The 2007 UN First Committee Session: Sign of Hope or Further Stalemate?' Nuclear Threat Initiative (1 April 2008) {http://www.nti.org/analysis/articles/2007-un-first-committee-session/} accessed 10 April 2017.
[117] '2007 First Committee Resolutions' (2007).
[118] Hans M. Kristensen and Matthew McKinzie, 'De-alerting nuclear forces', Bulletin of the Atomic Scientists (19 June 2013) {http://thebulletin.org/de-alerting-nuclear-forces} accessed 10 April 2017.
[119] Kristensen and McKinzie (2013).
[120] '2007 First Committee Resolutions' (2007).

despite remaining outside the NPT. It is telling, however, that India has received public recognition only for its positive track record on non-proliferation, a dominant benchmark of nuclear responsibility, and not for any of its restraint-based innovations. Certainly, India's success at being labelled a nuclear responsible by the United States is linked to US interests in that it offers a boost to US civil nuclear commerce, and draws India into a closer partnership that may one day counter a rising China. However, at the level of values and perceptions, in 2005 the United States administration must have been convinced of India's benevolence, both in the wider global order and the nuclear order, in order to diplomatically and domestically facilitate India's institutionalised inclusion in civil nuclear trading circles.[121] However, if India's restraint-based, innovative nuclear behaviours have played into US assessments of Indian nuclear benevolence, they have certainly not received overt recognition. Meanwhile, India's multilateral efforts at fostering an international consensus on de-alerting appear lacklustre and enjoy support primarily from NAM member states, with no uptake from the non-proliferation regime's hegemonic core.

Conclusion

We began this article with two puzzles: in their attempts to seek accommodation in a restraint-based global nuclear order, why have China and India not received recognition for the full spectrum of their restraint-based behaviours? Further, when they fail to secure recognition, why do they persist with these behaviours? We have shown how, throughout the 1990s and 2000s, China and India have used strategies of conformity and innovation to seek status as nuclear responsibles.

[121] Sullivan (2014a).

As ‘nuclear conformists’, China and India have sought responsible nuclear status either through institutional or normative means. In China’s case, institutional compliance (joining the NPT, CTBT, and NSG) has contributed most to demonstrating conformity. India has sought to demonstrate conformity through different avenues: an official moratorium on testing despite being outside the CTBT, and positive US appraisals of its non-proliferation record despite being outside the NPT.

China and India have also cast themselves as ‘nuclear innovators’, though with less success. For China, the key element of its innovation is NFU, but China has seen limited direct success in promoting NFU either as an international norm or as part of an international treaty. The reasons for this centre on the interests and values of key stakeholder states in the global nuclear order, as well as the enduring stain of a chequered proliferation past. For India, aside from modest attempts at promoting a norm on the de-alerting of nuclear weapons, a major goal of its innovation has been to seek recognition as a responsible nuclear power despite its lack of membership in the NPT or CTBT. Such recognition has been partially achieved, as evidenced by US facilitation of India’s inclusion into civil nuclear trade, but it is not an explicit response to India’s innovative restraint-based behaviour.

For China and India at least, their innovative nuclear policies make strategic sense and contribute to global nuclear stability. Chinese and Indian versions of restraint also offer a mechanism for identity-projection. Both states stress their distinctiveness as ‘minimalist’ nuclear possessor states, and at different moments in their post-Cold War nuclear histories have sought to re-imagine entrenched understandings of nuclear deterrence, arsenal size and the acceptable degree of operational alertness. Through these actions and positions, China and India have sought to set themselves apart from other nuclear weapons states. Such strategies

are intended to appeal to an audience beyond the elite club of nuclear powers, in particular the NAM, whose members comprise the bulk of non-nuclear weapon states.

Finally, China and India's attempts at normative innovation within the global nuclear order bring in fresh ideas that may serve to challenge underlying biases in nuclear analysis. One intellectual block relates to a Cold War framing of nuclear problems[122] that enables fixed thinking on concepts such as nuclear deterrence to persist today. Benoit Pelopidas argues that this implicit framing distorts our understanding of nuclear history and leads to an over-valuation of nuclear weapons within national security strategies.[123] Other intellectual blocks include assumptions that non-Western nuclear behaviour has an implicitly higher potential for recklessness.

Broadening our findings beyond the global nuclear order, we conclude from our analysis that conformist behaviours are the obvious fast track for rising powers to secure responsible status. While innovation can yield status dividends, success in the quest for the recognition of innovative norms and practices is difficult where the regimes and institutions that set out the social and legal responsibilities of member states are strongly controlled by a hegemonic core of states. In such cases, innovation is most significant for limited strategic gains at the level of the rising power itself, as well as its utility as a lens for identity-projection. Ultimately, even when innovation fails to take hold at an international institutional level, it nonetheless affords insight into the preferred social roles of rising powers, and introduces new, nascent ideas and norms into established patterns of global governance.

[122] Vipin Narang, Nuclear Strategy in the Modern Era, Regional Powers and International Conflict (Princeton: Princeton University Press, 2014), pp. 1-3; George P. Shultz and James E.Goodby, The War that Must Never be Fought: Dilemmas of Nuclear Deterrence (Hoover Institution Press, 2015).
[123] Benoit Pelopidas, 'The Oracles of Proliferation: How Experts Maintain a Biased Historical Reading that Limits Policy Innovation', Nonproliferation Review, 18, (2011), pp. 297-314.