Thesis submitted in partial fulfilment of the requirements for the degree of DPhil in International Relations in the Department of Politics and International Relations at the University of Oxford

China's Engagement with Global Nuclear Order since 1949

Nicola Horsburgh, St. Antony's College
Hilary Term 2012
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ABSTRACT

This thesis explores China's engagement with global nuclear order since 1949. In particular, China's engagement refers to the process of creating, consolidating and maintaining nuclear order by assessing the methods it adopts, as well as the motivations behind its policy and the implications of its actions for global nuclear order. Overall, it is argued that in the 1950s and 1960s, even before nuclear order existed, China had an inadvertent hand in its creation, contributing to American and Soviet thinking about how best to build an order, as well as offering its own ideas based on socialist proliferation. Then, in the 1980s and 1990s, China engaged in the process of consolidating nuclear order by developing alternative thinking on nuclear deterrence that challenged mainstream strategies such as mutual assured destruction; and by joining important institutions, for instance the Non Proliferation Treaty in 1992 and the Comprehensive Test Ban Treaty in 1996. In addition, during this period, China began to promote a new vision for nuclear order: that of a more representative order. China's current engagement, at a time when global nuclear order is perceived by many to be under significant strain, is less clear: while China remains committed to key global nuclear institutions and a minimal nuclear strategy; Beijing is also wary of deeper commitments, in particular multilateral arms control processes that might unfairly constrain its nuclear force capabilities relative to other nuclear weapons states.

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ABBREVIATIONS

ABM	Anti-Ballistic Missile Treaty
ACDA	Arms Control and Disarmament Agency
AMS	Academy of Military Science（军事科学研究院）
CACDA	China Arms Control and Disarmament Association（国军控与裁军协会）
CAEP	China Academy of Engineering Physics（中国工程物理研究院）
CASS	Chinese Academy of Social Sciences（中国社会科学院）
CCP	Chinese Communist Party（中国共产党）
CD	Conference on Disarmament
CMC	China's Military Commission（中央军事委员会）
CNKI	China Academic Journals（中国期刊全文数据库）
CSGAC	Chinese Scientists Group on Arms Control（中国科学家军备控制小组）
CTBT	Comprehensive Test Ban Treaty
CWIHP	Cold War International History Project
DNSA	Digital National Security Archives
ENDC	Eighteen Nation Disarmament Committee
FBIS	Foreign Broadcasting Information Service
FMCT	Fissile Material Cut-off Treaty
IAEA	International Atomic Energy Agency
IAPCM	Institute of Applied Physics and Computational Mathematics（北京应用物理与计算数学研究所）
ICBM	Intercontinental Ballistic Missile
IISS	International Institute for Strategic Studies
INF	Intermediate Nuclear Forces
MAD	Mutual Assured Destruction
MFA	Archives of the Ministry of Foreign Affairs, People's Republic of China（中华人民共和国外交部档案馆）
MIRV	Multiple Re-entry Vehicles
NAM	Non Aligned Movement
NFU	No First Use
NMD	National Missile Defense
NIE	National Intelligence Estimate
NPR	Nuclear Posture Review
NPT	Non-Proliferation Treaty
NSC	National Security Council
NSG	Nuclear Suppliers Group
P5	Permanent members of UN Security Council
PAROS	Prevention of Arms in Outer Space Treaty
PRC	People's Republic of China（中华人民共和国）
PLA	People's Liberation Army（人民解放军）
PNE	Peaceful Nuclear Explosion
PTBT	Partial Test Ban Treaty
USC	Universities Services Centre, Chinese University of Hong Kong
SAC	Second Artillery Corps（第二炮兵部队）
SALT	Strategic Arms Limitation Talks
SDI	Strategic Defense Initiative
SORT	Strategic Reduction Talks
SLBM	Submarine Launched Ballistic Missile
START	Strategic Arms Reduction Talks

Introduction
China's Engagement with Global Nuclear Order

China's behaviour as a nuclear weapons state is a major determinant of global security. It is, however, a surprisingly under-researched area of scholarly enquiry. Existing literature tends to focus on misdemeanours in China's non-proliferation record, the uncertain direction of its military spending and nuclear modernization, or the enduring opaqueness of its nuclear weapons policy.[1] Since the 1990s, discussions of Chinese nuclear behaviour largely take place in light of concerns regarding China's rise in international affairs. In this thesis, I propose an alternative context to understand China's past and present nuclear weapons behaviour: in terms of its engagement with the global nuclear order, a concept explained more fully later on. More concretely, the aim is to explore China's engagement with the process of creating, consolidating and maintaining nuclear order by assessing the methods it adopts, the motivations behind its policy and implications of its actions for nuclear order.[2] Of particular interest are China's evolving attitudes towards nuclear order, as well as its position in that order since 1949. Such an evaluation represents a new academic endeavour as the concept of nuclear order has not been applied before to the study of Chinese nuclear weapons behaviour. Indeed, nuclear order research has so far remained largely US centric or conceptual in nature. Crucially, this approach offers a different perspective from which to evaluate Chinese nuclear weapons calculations.

Today China has come to be recognized as a key state in global nuclear order. Indeed, for George Perkovich of the Carnegie Endowment for International Peace,

[1] For criticism of this literature, see Jeffrey Lewis, *The Minimum Means of Reprisal, China's Search for security in the Nuclear Age* (Cambridge, Massachusetts: American Academy of Arts and Sciences, 2007), pp. 90-128.

[2] Methods refer to the ways in which a state can participate in nuclear order, for instance the decision to develop a nuclear arsenal or join the Non-Proliferation Treaty.

China is 'the pivot that connects the biggest players in the global nuclear order'[3] and for PLA General Pan Zhenqiang, Beijing has 'important responsibilities in fostering a new nuclear world order'.[4] But this is a position it has not always held. During the 1960s and 1970s, as a nuclear weapons state China influenced nuclear order yet labelled treaties such as the 1963 Partial Test Ban Treaty (PTBT) and 1968 Non-Proliferation Treaty (NPT) fraudulent attempts by the United States and the Soviet Union to consolidate their nuclear monopoly. Gu Guoliang highlights how, at the time, China viewed the emerging nuclear order with suspicion.[5] China's position only began to change in the 1980s after it had joined the Conference on Disarmament (CD) in 1980 and the International Atomic Energy Agency (IAEA) in 1984. In the 1990s, China deepened its commitments by signing up to agreements such as the NPT in 1992 and the Comprehensive Test Ban Treaty (CTBT) in 1996, as well as ushering in domestic legislation on export controls. Medeiros, Johnston, and Kent, among others, offer explanations for this change, but they are not concerned with nuclear order; nor do their works go beyond the early 2000s.[6]

For its part, nuclear order is a useful concept that, until very recently, has not been the subject of in-depth and consistent study. Thus, this thesis offers an opportunity to develop the concept further in relation to China. The concept has recently gained prominence in media, academic and policy circles, over fears for the stability of the institutional foundations underpinning nuclear order. A 2008 report commissioned by the

[3] George Perkovich, 'Principles for Reforming the Nuclear Order', *IFRI Proliferation Papers*, 2008, p. 20.
[4] Pan Zhenqiang, 'The Changing Strategic Context of Nuclear Weapons and Implications for the New Nuclear World Order' in Christopher Twomey, ed., *Perspectives on Sino-American Strategic Nuclear Issues* (New York: Palgrave Macmillan, 2008), p. 69.
[5] Gu Guoliang, 'Chinese arms control and non-proliferation policy' in Twomey, *Perspectives on Sino-American Strategic Nuclear Issues*, p. 173.
[6] See Evan Medeiros, *Reluctant Restraint, the Evolution of China's Nonproliferation Policies and Practices, 1980-2004* (Stanford: Stanford University Press, 2007); Alastair I. Johnston, *Social States: China in international institutions 1980-2000* (Princeton: Princeton University Press, 2008); and Ann Kent, *Beyond Compliance, China, International Organizations, and Global Security*, (Stanford: Stanford University Press, 2007).

IAEA, for example, has listed pressures, old and new, undermining nuclear order. Recent challenges cited include nuclear weapons capacity in India, Pakistan, North Korea and potentially Iran; fear of nuclear terrorism since 9/11; the destabilizing effects of US National Missile Defence (NMD); failure of the NPT Review Conference in 2005; provocative US and Chinese activities in space; and the 2008 civilian nuclear deal between India and the US.[7]

Indeed, a United Nations panel on global threats and challenges concluded in 2004 'we are approaching a point at which the erosion of the non-proliferation regime could become irreversible'.[8] Later, in 2008, IAEA Director General Mohamed ElBaradei warned 'we are at a crucial juncture…the system is faltering'.[9] Similarly, the Belfer Center's Graham Allison and Ernesto Zedillo have argued that 'the architecture that has for four decades held back powerful pressures for the proliferation of nuclear weapons is shaking…the global nuclear order is under severe stress'.[10]

Chinese officials appear to agree with these statements. For China's former ambassador for arms control and disarmament, Sha Zukang, 'how to repair and consolidate the damaged international non-proliferation regime is a pressing task facing us today'.[11] In 2002, Liu Jieyi, Director of China's Arms Control Department, stated that the 'global strategic landscape is transforming and the international security environment is facing

[7] Commission of Eminent Persons on the Future of the Agency, 'Reinforcing the Global Nuclear Order for Peace and Prosperity, the role of the IAEA to 2020 and beyond', GOV/2008/22-GC (52)/INF/4, 2008.
[8] United Nations, *A more secure world: our shared responsibility*, report of the Secretary General's High-Level Panel on Threat, Challenges and Change, 2004, p.40.
[9] Mohammed ElBaradei, 'Preventing nuclear catastrophe: where do we go from here?' in Richard Falk and David Krieger, eds., *At the Nuclear Precipice: catastrophe or transformation?* (London: Palgrave Macmillan, 2008), p. 213.
[10] Graham Allison and Ernesto Zedillo, 'The Fragility of the global nuclear order', *The Boston Globe*, 1 October 2008. See also Graham Allison, 'Nuclear Disorder: Surveying Atomic Threats', *Foreign Affairs*, Vol. 89, Issue 1, 2010, pp. 74-85.
[11] Sha Zukang, 'China's Perspectives on Non-proliferation' in Joseph Cirincione, ed., *Repairing the Regime, Preventing the Spread of Weapons of Mass Destruction* (New York: Routledge, 2000), p. 127.

new challenges'. [12] In 2005, Zhang Yishan, head of the Chinese delegation to the CTBT, noted that 'severe challenges' confront the non-proliferation regime, arms control and disarmament process.[13] Chinese experts such as PLA Major General Yao Yunzhu and Tsinghua Professor Li Bin consider NMD especially problematic.[14] Competition in space[15] and the US-India civilian nuclear deal[16] represent other areas considered by the Chinese to be particularly detrimental to nuclear order.

With the above in mind, this thesis will develop the idea of nuclear order, and examine China's engagement with that order since 1949. Engagement is defined in terms of China's involvement (direct and indirect) in the process of creating, consolidating and maintaining nuclear order, through an examination of China's state actions and statements in reference to that order. All in all, the thesis is driven by three core research questions: how to understand the methods China uses and the motivations behind its policies, as well as the implications of its actions for global nuclear order. These central questions give rise to several subsidiary questions: How have China's attitudes towards and position in nuclear order evolved over time? In the 2000s, has China's influence over nuclear order altered in response to perceived evidence of a weakening in that order? Is China now shaping normative and institutional aspects of nuclear order to a far greater degree than ever before? The core and subsidiary questions are important given the seriousness of the subject matter and the potential danger nuclear weapons pose to global security, as well as the potential and actual impact of China's military rise. Essentially, nuclear order is a new lens through which to consider China as a nuclear weapons state.

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[12] Liu Jieyi, statement at 4th China- US Conference on arms control, disarmament and non-proliferation, Washington D.C., 4 March 2002.
[13]Zhang Yishan, statement at the Conference on Facilitating the Entry into Force of the CTBT, 22 September 2005.
[14] Yao Yunzhu, 'Chinese nuclear policy and the future of minimum deterrence' in Twomey, *Perspectives on Sino-American Strategic Nuclear Issues*, pp. 111-124; and Li Bin,'The Effects of NMD on Chinese Strategy', *Jane's Intelligence Review*, March 2001, pp. 49-52.
[15] Zhang Hui, 'Action/reaction: US space weaponisation and China', *Arms Control Today*, December 2005.
[16] *Xinhua*, 'China hopes nuke deal with India to help maintain nonproliferation system validity', 8 September 2008.

Global Order

To understand the concept of global nuclear order, and how it will be used in this thesis, it is useful to start with wider academic discussions of global order. There are various ways to envision order in International Relations, from polarity, collective security, hierarchy, concerts, or balances of power, to anarchy and world government.[17] For Realists, order can only be temporary in an international system defined by anarchy, self-help and survival. It is achieved when anarchy is contained through specific power structures, such as a concert of powers or a hegemonic state. Constructivism offers insight into how order is constructed and reconstructed via shared meanings, practices, ideas and norms.[18] However, it is the English School's notions of order that are perhaps the most insightful. For Hedley Bull, order is goal orientated: 'a pattern of activity that sustains the most basic goals of international society'.[19] These goals include security against violence, observance of agreements and stability of property. Bull awards great powers an important role and responsibility to uphold order.[20] In addition, institutions, such as the balance of power and war, serve order.[21]

Although a somewhat dated depiction, Bull's approach to order as a goal-orientated pattern remains a useful starting point for analysis.[22] Indeed, Alagappa heavily references Bull when defining order as a 'formal or informal arrangement that sustains rule-governed

[17] For Chinese views of order, see Rana Mitter, 'An Uneasy Engagement: Chinese Ideas of Global Order and Justice in Historical Perspective', in Rosemary Foot, John Lewis Gaddis and Andrew Hurrell, eds., *Order and Justice in International Relations* (Oxford: Oxford University Press, 2003), pp. 207-235.
[18] Nicholas J. Rengger, *International Relations, Political Theory and the Problem of Order* (London: Routledge, 2000), p.84.
[19] Hedley Bull, *The Anarchical Society, a study of order in world politics*, Second Edition (Basingstoke: Macmillan, 1995), p.8.
[20] Hedley Bull, 'The Great Irresponsibles? The United States, the Soviet Union, and World Order', *International Journal*, 1979-80, pp. 437-447.
[21] Hedley Bull, 'War and International Order', in Alan James, ed., *The bases of international order: essays in honour of C.A.W. Manning* (Oxford: Oxford University Press, 1973), pp. 116-132. There are problems with Bull's definition of order since not all states conform to Bull's three goals. See R.J. Vincent, 'Order in International Politics', in J.D. Miller and R.J. Vincent, eds., *Order and Violence* (Oxford: Clarendon Press, 1990), pp. 38-64.
[22] Andrew Hurrell, *On Global Order: Power, Values and the Constitution of International Society* (New York: Oxford University Press, 2007). Hurrell contends that order has moved on from an instrumental pluralist type towards a normative/contractual form.

interaction among sovereign states in their pursuit of individual and collective goals'.[23] Furthermore, order is constructed through intersubjective understandings that come about over time, via struggle, accommodation and cooperation.[24] Steve Chan's analysis also flows from Bull's writings. Chan offers three approaches to the study of world order: as a pattern of affairs (the empirical arrangement of status distributed among actors), as a normative ideal (in terms of the preferred vision of order among states), or as a description of policy behaviour (order based on the strategic conduct and decision-making of a particular country).[25] Similarly, Walker differentiates between three types of order: the highly subjective *condition* of order, in the sense that 'there is order' as a condition for stability and peace; *the* overarching global order (rules and institutions, such as the UN charter) which is a structural type of order that may not lead to a condition of order; and various global *orders* such as economic, security, or religious orders.[26]

In this thesis, the focus is on the creation, consolidation and maintenance of nuclear order through state actions, in this case an emerging power, China, in reference to that order. If we extend Walker's analysis, there is a *condition*, however strained, of order within nuclear order, and nuclear order is *an* order intertwined with and subordinate to *the* overarching global order. Finally, there exists *a* nuclear order because of the nature of the interaction between nuclear weapons and global order. This interaction rests on the potential of *a* nuclear order to threaten the existence of wider orders as well as *the* global order because nuclear weapons have both stabilizing and destabilizing effects,[27] interacting

[23] Muthiah Alagappa, 'The Study of International Order: An Analytical Framework' in Muthiah Alagappa, ed., *Asian Security Order: Instrumental and Normative Features* (Stanford: Stanford University Press, 2003), p. 39.
[24] Ibid, p. 52.
[25] Steve Chan, 'Chinese perspectives on world order', in T.V.Paul and John A.Hall, eds., *International Order and the Future of World Politics* (Cambridge: Cambridge University Press, 1999), p. 197.
[26] William Walker, *A Perpetual Menace: nuclear weapons and international order* (London: Routledge, 2011), p. 10.
[27] See Scott Sagan and Kenneth Waltz, *The Spread of Nuclear Weapons: a debate renewed* (New York: WW Norton and Company, 2003); Sumit Ganguly, 'Nuclear Stability in South Asia', *International Security*,

with global order in a revolutionary fashion by transforming military affairs among states.[28]

Global Nuclear Order

The idea of nuclear order is relatively new but there is growing interest and research on the concept. Indeed, the term is increasingly used by policy makers and academics.

Ashok Kapur was probably the first to explore in any depth the idea of nuclear order. In 1996, he lamented that 'terms [*such*] as…nuclear order are widely used as political slogans and have been embraced…without subjecting them to strict academic scrutiny'.[29] Later, in 2001, Kapur outlined features of nuclear order: US nuclear advantage and double standards, a bargain within the NPT, and a non-proliferation norm.[30]

However, it is William Walker who leads the field in the study of nuclear order with a book published on this topic in 2011, *Perpetual Menace*, as well as articles in *International Affairs* and an *Adelphi Paper* in 2004.[31] Walker approaches nuclear order as a multi-faceted problem that changes over the passage of time.[32] One of Walker's earliest definitions of nuclear order refers to a balance of two systems: 'managed deterrence' and

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Vol.33, No.2, 2008, pp. 45-70; and Paul Kapur, 'Ten Years of Instability in Nuclear South Asia', *International Security*, Vol. 33, No. 2, 2008, pp. 71-94.

[28]Until the nuclear revolution, immediate annihilation of states was not thought possible. Hence, for Brodie, 'thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them'. See Bernard Brodie and Frederick Dunn, eds., *The absolute weapon: atomic power and world order* (New York: Harcourt, 1946), p.76.

[29]Ashok Kapur, 'Rogue states and the international nuclear order', *International Journal*, Vol. 51, No. 3, Summer 1996, p. 420.

[30]Ashok Kapur,'New Nuclear States and the International Nuclear Order' in T.V.Paul, R.J. Harknett and J.J. Wirtz, eds.,*The Absolute Weapon Revisited, nuclear arms and the emerging nuclear order* (Ann Arbor: University of Michigan Press, 1998), pp. 237-261.

[31]William Walker, 'Nuclear Order and Disorder', *International Affairs*, Vol.76, No.4, 2000, pp.703-724; William Walker, *Weapons of Mass Destruction and International Order*, Adelphi Paper No. 370 (International Institute for Strategic Studies, Oxford: Oxford University Press, 2004); William Walker, 'Nuclear enlightenment and counter-enlightenment', *International Affairs*, Vol. 83, No. 3, 2007, pp. 431-453; William Walker, 'International nuclear order: a rejoinder', *International Affairs*, Vol. 83, No.4, 2007, pp. 747-756.

[32] Walker, *A Perpetual Menace*, pp. 20-28.

'abstinence'.[33] The first system is based on power politics, consisting of strategic doctrines and arms control. The second system contains three dimensions: the NPT, extended deterrence, and security assurances. Here, order is regime-based, maintained via the perceived legitimacy of the non-proliferation norm, the sharing of civilian nuclear energy, security assurances and safeguards.[34] In this nuclear order there exists an unspoken reliance on nuclear deterrence, and a promise, however weakly implemented, of nuclear disarmament by the nuclear weapons states party to the NPT. More recently, Walker has offered an alternative to the two systems approach, suggesting three 'logics' driving nuclear order: armament, disarmament and restraint.[35] These logics operate in the context of two systems: a managed system of military engagement with nuclear technology (defined as deterrence plus) and a managed system of military/civil abstinence from nuclear technology (non-proliferation plus).[36]

Walker also contends that the current nuclear order, constructed largely by the US and the Soviet Union during the Cold War, is under siege. The former George W. Bush administration played a significant role in destabilizing order, notably in the pursuit of counter-proliferation and NMD. There have been various stages in this breakdown, beginning in 1998 during the Clinton era with nuclear tests in South Asia, North Korea's ongoing nuclear activities, and the prospect of acts of catastrophic terrorism using WMD.[37]As a consequence, Walker calls for a rebuilding of nuclear order, re-orientated towards disarmament and the system of abstinence.

So far, there has been no major alternative to Walker's definition. However, a 2007 special edition of *International Affairs* on nuclear order demonstrates a growing divide within the academic community over the significance and status of the concept. On one

[33] Walker, 'Nuclear enlightenment', pp. 435-436; and Walker, *Weapons of Mass Destruction*, p. 25.
[34] Walker, *Weapons of Mass Destruction*, p. 28.
[35] Walker, *A Perpetual Menace*, pp. 5-6.
[36] Ibid, fig. 1.1, p. 24.
[37] Walker, *Weapons of Mass Destruction*, pp. 47-59.

side, Roberts and Hassner generally support Walker's ideas. Roberts, like Walker, laments that there is 'little debate about the nuclear order project'.[38] Hassner defines the current nuclear order as an NPT based order. In his view, this model triumphed over three other models: disarmament, a world nuclear government and a fully nuclear-armed world.[39] Both agree with Walker that nuclear order is under severe strain, but they diverge over the sources of this strain. Hassner points to a wider decline in international political order and hypocrisy within nuclear order.[40] Roberts sees the strain in nuclear order not so much as a result of US policy, but of architectural faults in the design of nuclear order. Further, Hassner and Roberts are less optimistic about reconstituting nuclear order. While Hassner stresses that deterrence will remain prominent, Roberts argues that, as yet, there is no viable alternative model on which to base nuclear order.[41]

On the other side of the debate, Yost, Krause and Ruhle[42] provide much harsher critiques of Walker's ideas, offering a largely neorealist account of nuclear order, with little room for norms and rules. For Yost, nuclear order is based less on legitimacy and institutional arrangements, and more on balance of power.[43] Krause offers a similar view, downplaying the crisis and stressing instead the importance of the US as the steward of nuclear order.[44] Similarly, Sokolski, in a realist vein, considers institutional frameworks like the NPT negative pillars of order because they permit too much advancement in the

[38] Brad Roberts, 'All the King's Men? Refashioning global nuclear order', *International Affairs*, Vol. 83, No. 3, 2007, p. 528.
[39] Peter Hassner, 'Who killed nuclear enlightenment?', *International Affairs*, Vol. 83, No.3, 2007, pp. 455-467. p. 458.
[40] Ibid, p. 455.
[41] Ibid, p. 466.
[42]Michael Ruhle, 'Enlightenment in the second nuclear age', *International Affairs*, Vol. 83, No. 3, 2007, pp. 511-522.
[43] David Yost, 'Analysing international nuclear order', *International Affairs*, Vol. 83, No. 3, 2007, pp. 555.
[44] Joachim Krause, 'Nuclear Proliferation and International Order, the reform of the nuclear non-proliferation regime', paper presented at the International Conference Global Security in the 21st Century: Perspectives from China and Europe, Beijing, 18-19 September 2007; and Joachim Krause, 'Enlightenment and nuclear order', *International Affairs*, Vol. 83, No. 3, 2007, pp. 483-499.

nuclear fuel cycle.[45] In essence, this group contend that Walker has overplayed the severity of the crisis in nuclear order, and exaggerated the role of the US in both perpetuating and damaging it. Walker has since countered this group by rooting the causes of decline beyond US policy to changes afoot in wider global order and the failure of international institutions, in particular the veto system in the UN Security Council and non-compliance with the IAEA, rather than the NPT.[46]

Beyond western analysis, China has displayed little academic interest in the idea of nuclear order. A few analysts, such as Pan Zhenqiang, only refer to the concept in a general way, offering unspecific Chinese affirmations of nuclear order, and the need to ensure its future robustness.[47] Others have focused on the discriminatory nature of that order, highlighting how China initially rejected nuclear order because it was based on a western rather than global model.[48] Another view, in a realist vein, is that the 'real nuclear order' lies beyond institutional frameworks and is dominated by the US.[49] Nevertheless, as a result of the recent debate on a nuclear weapons free world,[50] Chinese analysts have increasingly been exposed to the idea of nuclear order. This has led Fudan University Professor Shen Dingli, in a 2009 report for the Lowy Institute in Sydney, to write about the desirability of and China's ability to adapt to a 'nuclear weapons free order'.[51] Similarly, a 2009 Chinese news report has stated that: 'a nuclear weapons free world is desirable…such a global order will possibly restart the nuclear disarmament process and

[45] Henry Sokolski, 'Towards an NPT-restrained world that makes economic sense', *International Affairs*, Vol. 83, No. 3, 2007, pp. 531-548.
[46] Walker, *A Perpetual Menace*, pp. 8-9.
[47] Pan Zhenqiang, 'Guanyu chongjian quanqiu zhanlue wending de lilun sikao' [A Theoretical Approach to Rebuilding of Global Strategic Stability] *Guoji wenti yanjiu* [International Studies] April 2002, pp. 1-6.
[48] Author interview, Beijing, 7 September 2009 (No.10).
[49] Author interview, Beijing, 30 October 2010 (No. 35).
[50] See George Schulz, William Perry, Henry Kissinger and Sam Nunn in 'A World Free of Nuclear Weapons', *Wall Street Journal*, 8 January 2007. These discussions largely abandon the task of defining nuclear order, but they have advanced ideas on whether nuclear order is in decline and the nature of change desired and required.
[51] Shen Dingli, 'Towards a nuclear weapons free world: a Chinese perspective', *Lowy Institute*, November 2009, p. 9.

rebuild confidence in the non-proliferation of nuclear weapons'.[52] Again, however, the specific methods for reaching such an outcome are left undeveloped.

Conceptualising Nuclear Order

As noted earlier, this thesis focuses on China's past and contemporary engagement with nuclear order. Although elaborated in greater detail in the following chapter, core aspects of nuclear order as it is understood in the thesis will be briefly outlined here.

Purpose, structure and history

The basic purpose of nuclear order is the attainment of strategic stability.[53] Strategic stability rests on the prevention of arms races and major war, especially escalation to nuclear war. Structurally, global nuclear order is managed and influenced by several actors, of which the most important are nuclear armed states, in particular the US, but also Russia and China. Other actors include international security bodies such as the UN Security Council and IAEA, or even terrorist organizations allegedly intent upon securing nuclear weapons to inflict catastrophic damage on their enemies. Nuclear order also contains certain norms, treaties, legal obligations, confidence building measures and organizations. Lastly, various events, from the atomic bombings of Hiroshima and Nagasaki to the more recent disclosure of the A.Q. Khan network, have shaped the historical evolution of global nuclear order since 1945.

Four Elements of Nuclear Order

In addition to a detailed discussion of the purpose, structure and history of nuclear order, chapter one will elaborate on four core elements of nuclear order. These four core elements are: nuclear deterrence, arms control, non-proliferation and disarmament. It is in reference to these elements that China's engagement with the nuclear order will be assessed. This

[52] *China Daily*, 'A Nuclear Weapon Free World an inspiring ideal', 7 May 2009.
[53] Patrick Cronin and Audrey Cronin, 'Challenging Deterrence: Strategic Stability in the 21st Century', Special Joint Report, International Institute for Strategic Studies and Oxford University Changing Character of War Programme, February 2007.

approach builds on Walker's systems and logics approach by widening the definition to incorporate disarmament and arms control. This widening is useful, uncovering the interplay between the core elements of nuclear order, in particular the ways in which the elements both complement and contradict each other. These relationships have implications for the strength or weakness of nuclear order. For instance, deterrence and arms control complement each other, whereas disarmament works well with non-proliferation, but not so well with arms control and deterrence. Crucially, all four are core elements because they share a common history and goal --strategic stability-- though the strategies to attain that goal might conflict, and their relative influence fluctuates over time, reflecting the priorities of national security agendas.

The first core element, deterrence, can be both a condition between nuclear armed states (such as mutual assured destruction or vulnerability) and a strategy (for instance minimal deterrence).[54] In Asia, the predominant strategies today are extended deterrence (a nuclear guarantee provided by the US to Japan, South Korea and possibly Taiwan), existential deterrence (North Korea) and minimal deterrence (China). Alagappa has convincingly shown how deterrence has played an important part in preserving the peace in Asia.[55] However, the perceived value of deterrence underwent a crisis of confidence following the end of the Cold War, and is again under challenge from those advocating a nuclear weapons free world.[56]

Arms control, the second element of nuclear order, aims to reduce the risk, cost and damage of nuclear war. This might involve a reduction or increase in capabilities so long as strategic balance and deterrence are preserved. Unlike disarmament, arms control thus works to preserve the stability provided by deterrence, whereas disarmament works to

[54] For more, see Lawrence Freedman, *Deterrence* (Cambridge: Polity, 2004).
[55] Muthiah Alagappa, *The Long Shadow: nuclear weapons and security in 21st century Asia* (Stanford: Stanford University Press, 2008), pp. 502-505.
[56] Ward Wilson, 'The myth of nuclear deterrence', *The Nonproliferation Review*, Vol. 15, No. 3, November 2008, pp. 421-439.

dismantle nuclear weapons and many forms of deterrence.[57] During the Cold War, arms control efforts include the Strategic Arms Limitation Talks (SALT I and II, 1972 and 1979), Anti-Ballistic Missile Treaty (ABM, 1972) and Intermediate-Range Nuclear Forces Treaty (INF, 1987). In the post Cold War era, arms control treaties include the Strategic Arms Reduction Treaty (START I, 1991) and Strategic Offensive Reduction Treaty (SORT, 2002).[58] Following the US withdrawal from the ABM treaty in 2002 and the expiration of START I in 2009, arms control lost some momentum, but this has now returned with the new START treaty, signed and subsequently ratified by the US and Russia in 2010.

Non-proliferation is the third element of nuclear order. It has long been a priority on the US agenda, as well as the agendas of the anti-nuclear weapons movement, the non-aligned movement (NAM), and neutral states. Unlike deterrence or disarmament, this pillar has its own regime, centred around the NPT and the norm of non-proliferation. It is supported by national arrangements on export controls, as well as more coercive strategies of counter-proliferation and measures like the Proliferation Security Initiative (2003) and UN Security Council Resolution 1540 (2004).

Disarmament represents the fourth core element of nuclear order. Tannenwald points to civil disarmament movements since the 1950s contributing to a 'taboo' against nuclear use.[59] Moral and ethical reasons have typically been cited in support of disarmament. Scientists and peace activists have been particularly influential in promoting this element, resulting in declarations such as the 1955 Russell-Einstein Manifesto and the 2000 Abolition Statement. Today, this pillar is witnessing resurgence with the nuclear free

[57]Hedley Bull, *The Control of the Arms Race, disarmament and arms control in the missile age* (London: Weidenfeld & Nicolson, 1961), p. 56.
[58] The SORT treaty was of limited value. See National Defense Resources Council, 'The Moscow Treaty's hidden flaws', February 2003, http://www.nrdc.org/nuclear/moscow/moscflaw.asp [accessed 20 November 2008]
[59] Nina Tannenwald, *The Nuclear Taboo, The United States and the Non-Use of Nuclear Weapons Since 1945* (Cambridge: Cambridge University Press, 2007), pp. 156-161 and pp. 278-282.

world movement, which counts among its supporters not only the general public but also academics and certain policymakers.

In sum, nuclear order consists of four elements: nuclear deterrence, arms control, non-proliferation and disarmament. It is in reference to these core elements that one may assess an actor's behaviour in the global nuclear order.

Understanding Engagement[60]

In order to assess China's nuclear behaviour -- namely the methods, motivations and impact of its engagement with the creation, consolidation and maintenance of nuclear order -- an analytically eclectic approach has been adopted, taking onboard a number of theoretical approaches in International Relations.[61] This approach suggests a need to consult a wide body of literature related to nuclear weapons which, although often focused on proliferation --namely, the role of particular factors in determining whether a state is likely or not to seek nuclear weapons-- sheds light on variables likely to be useful in understanding state actions in global nuclear order.

Methods and Impact of Engagement

In assessing the methods of engagement, four types are proposed. First, it is useful to distinguish between two types: that which is direct or indirect. Direct forms of participation refer to behaviour that actively contributes to the shaping of nuclear order, for instance China's decision to join the NPT in 1992. Indirect forms of engagement refer to behaviour that passively shapes nuclear order by motivating other states to shape that

[60] Here the understanding approach draws from Martin Hollis and Steve Smith, *Explaining and understanding international relations* (Oxford: Clarendon Press, 1990).

[61] Peter J. Katzenstein and Rudra Sil, 'Rethinking Asian Security: A Case for Analytical Eclectism', in J.J. Suh, P.J. Katzenstein and A. Carlson, eds., *Rethinking Security in Asia: identity, power and efficiency* (Stanford: Stanford University Press, 2004), pp. 1-33; and Etel Solingen, *Nuclear Logics, contrasting paths in East Asia and the Middle East* (Princeton: Princeton University Press, 2007), pp. 11-53. Randall Schweller's work on the behaviour of emerging powers in world order is very insightful, see 'Emerging powers in an age of disorder', *Global Governance*, Vol. 17, 2011, pp. 285-297; and Randall Schweller and Xiaoyu Pu, 'China's visions of international order in an era of US decline', *International Security*, Vol. 36, No. 1, Summer 2011, pp. 41-72.

nuclear order in particular ways as a result of Chinese actions, as with China's decision to develop nuclear weapons. Second, engagement can be categorized according to its normative, organizational or strategic nature. There are forums, such as the CD or UN General Assembly, in which to declare support for norms, and these declarations may reinforce order. Organizational forms of behaviour refer to treaties like the CTBT, which a state can join and promote. Lastly, strategic behaviour may be determined by declaratory doctrine, and the direction of military modernization, if such a programme is underway. Third, states may participate on a unilateral, bilateral or multilateral basis with nuclear order. Unilateral forms of engagement include declaratory policy, such as No First Use; bilateral engagement refers to actions between two states, as in the new START treaty between the US and Russia; and multilateral forms of engagement can be regional, as in the Six Party Talks, or international, in forums like the NPT Review Conferences. Fourth, the pace of engagement might vary. Extending work by Kent, there are stages to engagement: from joining, implementation, enforcement and promotion.[62]

These methods influence nuclear order in various ways. Crucially, both direct and indirect forms of engagement can have a negative and positive effect on the process of creating, consolidating and maintaining nuclear order. For instance, engagement can strengthen nuclear order, such as the US ratifying the new START treaty or it can be destructive, undermining laws within nuclear order, as in North Korea's decision in 2003 to withdraw from the NPT, the first state ever to do so.

Motivations behind engagement

To understand the motivations behind state engagement with nuclear order, two sets of independent yet interconnected variables, domestic and external, are proposed. These variables are discussed in detail in chapter one, and briefly outlined below.

[62] Kent, *Beyond Compliance*, p.26.

The domestic variables come from an appreciation of work by nuclear weapons experts such as Solingen and Sagan, as well as analysis of China's international behaviour by Medeiros and Johnston. I extend their analysis to argue that domestic politics and interests influence an actor's decision to engage with nuclear order in four ways. First, engagement might be driven by an economic incentive. This includes financial, technological and scientific gains from nuclear trade, and the creation of a peaceful environment for economic growth and energy security.[63] Second, engagement might be motivated by bureaucratic state and sub-state actors. Indeed, constructivist analysis allows for a role to be played by epistemic communities, such as arms controllers, in the nuclear decision-making process.[64] In this vein, Adler credits the US arms control community with a crucial role in the emergence of the ABM treaty signed by the US and the Soviet Union in 1972.[65] The third domestic variable is related to normative sources of national power, in particular status and prestige. Fourth, historical experience is an important domestic variable, likely to influence the willingness of actors to engage with nuclear order. For instance, the US atomic bombing of Japan in 1945 might explain in part why Tokyo has not sought to develop nuclear weapons. In sum, four domestic variables: economic development; bureaucratic interests; normative sources of national power; and historical experience provide reasons both for and against engagement with the nuclear order.

External variables offer additional explanatory power for engagement. Four external variables appear relevant. First, foreign pressure and incentives may induce an actor to engage with nuclear order. Second, treaty and institutional constraints may lead to a 'locked-in' or 'slippery slope' phenomena discussed by Kent in *Beyond Compliance* and Johnston in *Social States*. Participation breeds participation as state officials are socialized

[63] Sokolski, 'Towards an NPT-restrained world that makes economic sense', pp. 534-535.
[64] Maria Rublee, *Nonproliferation Norms: Why States Choose Nuclear Restraint* (Athens: University of Georgia Press, 2009).
[65] Emanuel Adler, 'The emergence of cooperation: national epistemic communities and the international evolution of the idea of nuclear arms control', *International Organization*, Vol. 46, No. 1, 1992, pp. 101-145.

to believe in the benefits of nuclear order. Third, change in threat perceptions, alliance politics and balances of power might force a state to re-assess whether engagement would enhance or constrain its security. A state might reconsider its policies if it feels that deeper engagement would limit its military capabilities relative to other states. Alternatively, nuclear blackmail and the threat of nuclear attack might persuade actors to become nuclear weapons states. Fourth, state perceptions of nuclear order represent an external variable. For some, nuclear order might enhance security and status but, for others, it is a discriminatory order best undermined.

Methodology

The intention is to develop a research framework to study the methods, motivations and impact of China's engagement with global nuclear order since 1949. It is hoped that the research framework, though applied to China, could be relevant to the study of other actors within global nuclear order. [66] A chronological timeframe has been adopted to give a sense of how Chinese nuclear weapons behaviour has evolved over time, both before China became a nuclear weapons state in 1964 but also later, in light of its more active and direct involvement in consolidating nuclear order in the 1980s and 1990s.

Overall, various qualitative methods have been adopted. For example, discourse analysis has been used to examine the meaning behind official documents, elite interviews and statements by Chinese officials, academics and analysts on issues related to nuclear deterrence, arms control, non-proliferation and disarmament.[67] This method has shed light on Chinese perceptions of nuclear order, as well as the pattern and nuances of China's commitment to norms such as non-proliferation. In addition, over sixty interviews with US, UK and Chinese policymakers and experts have been carried out so as to build a rich

[66] Gary King, Robert Keohane and Sidney Verba, 'Descriptive Inference' in *Designing social inquiry: scientific inference in qualitative research* (Princeton: Princeton University Press, 1994), pp. 34-74.
[67] George Alexander and A. Bennett, 'Process Tracing and Historical Explanation' in George Alexander, ed., *Case Studies and Theory Development in the Social Sciences* (London: MIT Press, 2005), pp. 205-232.

dataset. These interviews have adopted a semi-structured technique for flexibility in discussion.[68]

Fieldwork

To assist data collection and analysis, extensive fieldwork has been carried out in China and the US.[69] In 2009, several short research trips proved useful. In February of that year, the author presented aspects of her work at the International Studies Association annual conference in New York, and was able to meet with China security experts such as Christopher Twomey. In April, the author returned to the US to attend the International Carnegie Nonproliferation conference in Washington DC, and use the Library of Congress, as well as the Arms Control Association library. In addition, interviews were conducted with academic and policy experts, including Shen Dingli, Jeffrey Lewis and Brad Roberts. Later, in Beijing, between August and September 2009, extensive use was made of the archives of the Foreign Ministry of the People's Republic of China (*Zhonghua renmin gongheguo waijiaobu danganguan* 中华人民共和国外交部档案馆), and interviews were conducted with experts at Tsinghua University, the Chinese Academy of Social Sciences (CASS), the China Institutes for Contemporary International Relations (CICIR), and China Foundation for International and Strategic Studies (CFISS).

Between March and June 2010, research was conducted at the East Asia Nonproliferation Program at the Center for Nonproliferation Studies (CNS) in Monterey, California, sponsored by Dr. Jing-dong Yuan. During this visit, material on US-China

[68] Tom Wengraf, *Qualitative social interviewing: biographic narrative and semi-structured methods* (London: Sage, 2001), p.5. Access to Chinese military experts and reluctance to discuss nuclear issues were anticipated problems in the interview process. However, as a visiting scholar at Tsinghua University in 2010-2011, my sponsor Professor Li Bin facilitated contact with relevant Chinese experts. In addition, while in the US, at the Center for Nonproliferation Studies (CNS), I had the opportunity to meet Chinese officials and nuclear experts.

[69] The thesis also benefitted from a previous trip to Beijing, from March to September 2007. During this visit, the author conducted interviews with Chinese experts for her MPhil thesis on contemporary Chinese nuclear weapons policy, completed in 2008 at the University of Oxford. In addition, while in the UK, the author had the opportunity to meet with leading nuclear scholars such as Muthiah Alagappa, Bates Gill, Rebecca Johnson, William Walker and Nicholas Wheeler.

bilateral nuclear dialogues and China's role in the Six Party Talks was collected. In addition, interviews were conducted at Stanford University with David Holloway, John Lewis and Xue Litai. Then, in June 2010, extensive use was made of the George Washington University's China Documentation Centre and National Security Archives in Washington DC and interviews were conducted with experts at the Center for Strategic and International Studies (CSIS), the Pentagon and US State Department. Later, in August 2010, as a participant in the University of California San Diego Public Policy and Nuclear Threats workshop, interviews were conducted with Susan Shirk, Tai Ming Cheung, and Ambassador Linton Brooks.

For academic year 2010-11, I was a visiting research student at the Arms Control Program at Tsinghua University in Beijing, sponsored by Professor Li Bin. Tsinghua University offered a wide array of Chinese language sources not available in the UK, such as official memoirs, as well as access to policymakers, scientists, and military experts like PLA General Pan Zhenqiang through seminars at Tsinghua, as well as events elsewhere, held at Beijing University and the Carnegie-Tsinghua Center for Global Policy. In addition, in September 2010, interviews were conducted with Gong Keyu and Wu Chunsi, nuclear experts based at the Shanghai Institute of International Studies. Then, in November 2010, research was carried out at the Universities Service Centre for China Studies (USC) at the Chinese University of Hong Kong. More recently, from October to December 2011, I returned to CNS in Monterey as a pre-doctoral fellow, where I was able to conduct interviews with a number of international diplomats from the CTBTO and CD, as well as diplomats from the Arms Control Department of the Chinese Ministry of Foreign Affairs.

Written Sources

Apart from the materials gleaned from the interviews detailed above, Chinese and English documents were collected and analysed. Methodological challenges exist on such a

sensitive subject. Many sources will remain classified and gaps exist between declaratory doctrine and actual behaviour, but these difficulties have been found not to be particular to China.[70]

Moreover, since the 1990s, China has issued an increasing number of official documents and statements on nuclear issues. In March 2011, China issued its seventh defence white paper, with a section on nuclear weapons and doctrine. China's Department of Arms Control and Disarmament website contains useful information on arms control and non-proliferation. There is also a growing body of expertise in China on nuclear issues. Of particular note are experts at CICIR, CASS, CFISS, the Chinese Association for Disarmament and Arms Control (CACDA), and academics at Beijing, Tsinghua and Fudan universities. This has resulted in sophisticated policy and technical papers published on a steady basis since 2005 in journals like *World Politics and Economics* and *China Security*. These papers are available via the Chinese Academic Journal database (also known as CNKI) created by Tsinghua University and Wanfang database. In addition, past and present editions of the Chinese newspapers *Renmin Ribao* (*Peoples' Daily*) and *Jiefangjun Bao* (*PLA Daily)* are available to consult via the Eastview database. Hardcopies of important Chinese texts on nuclear weapons,[71] official speeches and memoirs, as well as journals not available on CNKI and Wanfang have been consulted at Tsinghua University library, Beijing University library, the Chinese University of Hong Kong, [72] and at the China Documentation Center in Washington DC. [73] In addition, the Foreign Ministry Archives in Beijing was useful for declassified reports and transcripts from the period

[70]Evan Medeiros, 'Undressing the Dragon: researching the PLA through open source exploitation' in James Mulvenon and Andrew Yang, eds., *A poverty of riches: new challenges and opportunities in PLA research* (California: RAND, 2004) p. 155.

[71] Such as Liu Huaqui's, *Junbei kongzhi yu caijun shouce* [Arms Control and Disarmament Handbook] (Beijing: Guofang Gongye Chubanshe, 2000); Liang Dongyuan, *Zhongguo di yi ke yuanzidan 596 mishi* [China's First Atomic Bomb: The Secret History of 596] (Wuhan: Hubei Renmin Chubanshe, 2000).

[72] Resources at USC were examined to see if materials there complemented that found in mainland China.

[73] The China Documentation Center was an invaluable resource for books on Chinese nuclear strategy, as well as PLA journals such as *Zhongguo junshi kexue*, which is not available via the CNKI journals database.

between 1949 and 1965. For consistency in translation, use was made of the 2008 *Chinese-English English-Chinese Nuclear Security Glossary* published by the US Committee on International Security and Arms Control (National Academy of Sciences), and the Chinese Scientists Group on Arms Control (Chinese People's Association for Peace and Disarmament).

Relevant English language material on Chinese nuclear issues has also grown. News sources such as the *People's Daily*, *Xinhua*, *Lexis Nexis*, and the *World News Connection* (*FBIS*, for Chinese government publications such as *Qiushi)*[74] have been consulted in addition to various reports from the *BBC Summary of Broadcasts for the Far East* (SWB) and the *Peking/Beijing Review*. Several journals have been useful, including *International Security* and *International Affairs*; the China and Asia-specific *China Quarterly, Far Eastern Economic Review, Pacific Review, Asian Security, China Security, Korean Journal of Defense Analysis, Asia Policy, China Brief, Comparative Connections, China Confidential, and China Leadership Monitor*; as well as the nuclear-related *Arms Control Today, The Nonproliferation Review* and *Bulletin of the Atomic Scientists*. Several primary documentary collections such as the *Digital National Security Archives, Foreign Relations of the United States*, and the *Cold War International History Project* offer important material in English.

Structure of Thesis

The thesis is divided into four parts, with six chapters in all. In part one, the thesis provides an in-depth study of the concept of nuclear order, and the elaboration of a research framework including my model for nuclear order. The research framework is applied throughout the thesis so as to evaluate which variables best explain, individually or in combination, a particular period of Chinese engagement with nuclear order. The

[74] FBIS was accessible through the China Documentation Center at George Washington University.

framework is also designed to identify the methods China uses to engage in nuclear order, as well as the negative and positive effects of that engagement for order. In parts two, three, and four this framework is applied to China's engagement during three periods of nuclear order: its creation between 1945 and the late 1970s, its consolidation in the 1980s and 1990s, and maintenance in the face of challenges from the late 1990s onwards. This chronological approach highlights how nuclear order has developed overtime, as well as how far Chinese positions have evolved on key issues such as nuclear deterrence and non-proliferation. While the aim of the thesis is to understand China's engagement with nuclear order, my analysis also affords insight into China's strategic thinking on the national and global role of nuclear weapons.

- **Part One: Conceptual and Research Framework**

  Chapter 1. The idea of global nuclear order

- **Part Two: China's engagement in the *creation* of global nuclear order**

  Chapter 2. Maoist China and the advent of the nuclear age, 1949-64

  Chapter 3. China's nuclearisation and the emergence of nuclear order, 1964-76

- **Part Three: China's engagement in the *consolidation* of global nuclear order**

  Chapter 4. Post-Mao China engages in global nuclear order, 1976-89

  Chapter 5. China and the consolidation of nuclear order in the 1990s

- **Part Four: China's engagement in the *maintenance* of global nuclear order**

  Chapter 6. China and the maintenance of nuclear order in the 2000s

Chapter One: The idea of global nuclear order

Chapter one provides a definition of nuclear order that builds upon existing literature, and then illustrates how the concept will be used to assess Chinese engagement with nuclear

order. The purpose, structure and history of nuclear order, as well as its four core elements, namely, nuclear deterrence, arms control, non-proliferation and disarmament, are discussed. In addition, the independent variables driving Chinese engagement, as well as the methods and impact of these for nuclear order, are refined.

Chapter Two: Maoist China and the advent of the nuclear age, 1949-64

This chapter explores Maoist China's engagement in the process of creating nuclear order before it detonated its own nuclear device in 1964. Particular attention is paid to Chinese attitudes towards nuclear weapons and their proliferation, as well as efforts to develop its own nuclear deterrent. Most analysis tends to point to Maoist China as a vociferous bystander critical to treaties like the NPT, and therefore an obstacle to building nuclear order. This chapter complicates that picture: China came to facilitate nuclear order as it eventually emerged by indirectly influencing the thinking of the superpowers as to how best to manage nuclear weapons and shape an order based around non-proliferation. Indeed, in the early 1960s, China saw value in a nuclear order, presenting its own ideas based around what I term 'Socialist Proliferation'.

Chapter Three: China's nuclearisation and the emergence of nuclear order, 1964-76

Chapter three focuses on the impact of China's nuclearisation on 16 October 1964 on global nuclear order, continuing the argument made in Chapter Two that China actually helped facilitate (however inadvertently) the emergence of nuclear order. During this period, a model for global nuclear order to which China was ostensibly opposed eventually emerged as the basis for nuclear order. By the mid to late 1960s, China abandoned ideas related to socialist proliferation and retreated from stances that directly challenged the nuclear order so as to focus on building a reliable nuclear deterrent.

Chapter Four: Post-Mao China engages in global nuclear order, 1976-89

This chapter focuses on China's engagement with the global nuclear order during the immediate post-Mao period of opening up and reform, between 1976 and 1989. In particular, it explores China's initial decision to engage with nuclear order by joining the CD in 1980 and the IAEA in 1984, as well as China's reaction to treaties like the INF. Crucially, in this period, China engaged with the global nuclear order on two fronts: by developing its first nuclear weapons strategy, and then by reversing past positions on arms control and non-proliferation, leading to its engagement with key institutions of nuclear order. This was a dramatic departure from past behaviour under Mao, during which China had challenged the superpowers' ideas for nuclear order and then entered into a period of isolation from emerging nuclear order.

Chapter Five: China and the consolidation of nuclear order in the 1990s

During this period, the global nuclear order underwent significant consolidation. China seized this opportunity to promote a more representative order and secure its stake in that order as a credible and legitimate nuclear weapons state. China set to this task in two main ways. First, China's military modernization process and debates regarding nuclear strategy validated the deterrence pillar of nuclear order and bolstered the credibility of its nuclear deterrent. Second, through deeper engagement with non-proliferation institutions and support for arms control China reinforced these core elements of nuclear order, at the same time enhancing its image and legitimacy. Unfortunately by the late 1990s, with important changes afoot in the external security environment, the future direction of nuclear order was cast into doubt.

Chapter Six: China and the maintenance of nuclear order in the 2000s

The last chapter provides an assessment of China's engagement with what for many has become a broken nuclear order in the 2000s. Particular attention is paid to shifts in US nuclear weapons policy towards National Missile Defense and strategies of counter proliferation since these are problematic for China in terms of its own nuclear deterrent but also for fear that nuclear order is moving away from the more representative order preferred by Beijing, towards a unilateral order based on US nuclear hegemony. Despite these difficulties, China remains committed to a nuclear strategy based on retaliation. In addition, China continues to engage with institutional aspects of the nuclear order, but at a chequered pace, displaying some resolve over the North Korean nuclear crisis by hosting the Six Party Talks from 2003 onwards, but a lack of resolve elsewhere, as with the FMCT negotiations and the Iranian nuclear crisis. The chapter will end with recent efforts to repair the nuclear order, examining China's perspective on these initiatives as well as on other more negative developments, for instance the 2008 US-India civilian nuclear deal.

Chapter One
The Idea of Global Nuclear Order

In this thesis, global nuclear order acts as the reference point for China's nuclear weapons behaviour since 1949. The introduction has already highlighted how nuclear order is an important yet understudied concept within the academic field. Here, the task is two-fold: to provide a definition of global nuclear order that builds upon existing literature, and then to illustrate how the concept will be applied to the study of China's nuclear behaviour in reference to nuclear order. Thus, the first part of this chapter provides a definition of nuclear order using existing debates. It then explores the purpose, history and structure of that order. This discussion leads to my model of global nuclear order which consists of four core elements: nuclear deterrence, arms control, non-proliferation and disarmament. The second part of the chapter layouts how my model can be used to assess nuclear weapons behaviour. Nuclear behaviour is analysed here in terms of engagement, where engagement implies both a positive and negative relationship with state actions designed to create, consolidate, and maintain nuclear order. Assessment of China's behaviour in terms of its engagement with nuclear order will focus on three areas: the methods, motivations, and implications of its engagement for nuclear order. In sum, this chapter intends to contribute to the conceptual debate on nuclear order, and offer engagement with that order as an innovative approach to the study of nuclear behaviour.

Defining Nuclear Order

First used in 1977[1] and increasingly throughout the 2000s, exactly what is meant by nuclear order is far from clear, opening the concept to confusion and misuse. Indeed, in 1996, Ashok Kapur noted 'terms [*such*] as…nuclear order are widely used as political

[1]Michael Mandelbaum, 'International Stability and Nuclear Order: The first Nuclear Regime' in D. Gompert and M. Mandelbaum, eds., *Nuclear Weapons and World Politics: alternatives for the future* (London: McGraw Hill, 1977), p. 13.

slogans…without subjecting them to strict academic scrutiny'.[2] More recently, in 2007, Brad Roberts lamented that 'the analytic community is not even sure of the right starting point for the discussion of what global nuclear order is'. [3] Perhaps this explains why, apart from a few scholars, most notably Professor William Walker of the University of St. Andrews,[4] and an exchange of ideas in the *International Affairs* journal in 2007, many use the term without defining it.

Another explanation for this lack of academic inquiry is the claim that a nuclear order doesn't exist, or if it does, it is best defined in narrow power politics terms, where nuclear order is simply a set of relations between major powers. This definition, best developed by the realist school of International Relations, bases its world-view on an anarchic international system in which the search for security or power drives state behaviour, with little room for norms and institutions. The dominance of this view, particularly among the US intellectual elite in the nuclear field, explains why so many have not felt the need to define global nuclear order in any great depth. Indeed, it is in this vein that Ruhle,[5] Sokolski, [6] Krause,[7] and Yost[8] reject notions of nuclear order and offer a neorealist account based on balance of power. Ruhle takes particular issue with the notion of a global ordering project and the significance of the Non Proliferation Treaty (NPT) in that project, rejecting the contractual nature of this treaty and the value of Article VI

[2] Ashok Kapur, 'Rogue states and the international nuclear order', *International Journal*, Vol. 51, No. 3, 1996, p. 420.
[3]Brad Roberts, All the King's Men? Refashioning global nuclear order', *International Affairs*, Vol. 83, No. 3, 2007, p. 525.
[4]William Walker, *A Perpetual Menace: nuclear weapons and international order* (London: Routledge, 2011).
[5]Michael Ruhle, 'Enlightenment in the second nuclear age', *International Affairs*, Vol. 83, No. 3, 2007, pp. 511-522.
[6]Henry Sokolski, 'Towards an NPT-restrained world that makes economic sense', *International Affairs*, Vol. 83, No. 3, 2007, pp. 531-548.
[7]Joachim Krause, 'Enlightenment and nuclear order', *International Affairs*, Vol. 83, No. 3, 2007, pp. 483-499.
[8]David Yost, 'Introduction: thinking about 'enlightenment' and 'counter-enlightenment' in nuclear policies', *International Affairs*, Vol. 83, No. 3, 2007, pp. 427-430.

related to arms control and disarmament.[9] Sokolski adds that the NPT is actually a negative aspect of order because it permits too much advancement in the nuclear fuel cycle. Yost argues along classic realist lines that nuclear order is based less on legitimacy and institutional arrangements, and more on balance of power.[10] Krause offers a similar view, while stressing the importance of the US as the steward of nuclear order.[11] In essence, this group contend that the concept of nuclear order has been overplayed.

An alternative definition is offered by William Walker, who argues that 'there has to be a nuclear order, but that order is much more than a structure of power and a set of deterrent relations'.[12] Walker takes his cue from the English School of International Relations, and in particular work by Hedley Bull, in defining nuclear order as entailing 'evolving patterns of thought and activity that serve primary goals of world survival, war avoidance and economic development; and the quest for a tolerable accommodation of pronounced differences in the capabilities, practices, rights and obligations of states'.[13] Crucially, by referring to 'patterns of thought' and a 'quest for accommodation' Walker's definition goes beyond realist accounts and gives room for the role of ideas, the passage of time, and change in shaping nuclear order. It also allows for the expression of differences, both material and ideational, among its member states.

In earlier work, Walker has outlined a model of global nuclear order based on two systems: 'managed deterrence' and 'abstinence'.[14] The first system, based on power politics, consists of command and control, nuclear doctrines, and arms control. The second

[9] Ruhle, 'Enlightenment in the second nuclear age', pp. 511–522
[10] Yost, 'Analysing international nuclear order', p. 555.
[11] Krause, 'Enlightenment and nuclear order', pp. 483-499. See also Joachim Krause, 'Nuclear Proliferation and International Order, the reform of the nuclear non-proliferation regime', paper at the International Conference Global Security in the 21st Century: Perspectives from China and Europe, Beijing, 18-19 September 2007.
[12] Walker, 'Nuclear order and disorder', *International Affairs*, Vol. 76, No. 4, 2000, p.722.
[13] Walker, *A Perpetual Menace*, p.12.
[14] William Walker, 'Nuclear enlightenment and counter-enlightenment', *International Affairs*, Vol. 83, No. 3, 2007, pp. 435-436.

system contains three dimensions: the Non-Proliferation Treaty (NPT), extended deterrence, and security assurances. Here, order is regime-based, maintained via the perceived legitimacy of the non-proliferation norm, the sharing of civilian nuclear energy, and safeguards.[15] Overall, there exists a reliance on nuclear deterrence and eventual disarmament by the nuclear weapons states party to the NPT. Both systems work in parallel since one cannot exist without the other, but the system of deterrence is 'king'.[16]

More recently, in his 2011 book *Perpetual Menace*, Walker has modified slightly his terminology, defining nuclear order according to three logics: armament, disarmament and restraint.[17] These logics operate in the context of two systems: a managed system of military engagement with nuclear technology (defined as deterrence plus) and a managed system of military/civil abstinence from nuclear technology (non-proliferation plus).[18] This approach has a strong scientific focus, building a definition of nuclear order around developments in nuclear technology: from its discovery in the 1930s and 1940s, to subsequent attempts to manage this technology in the civilian and military sectors ever since. Walker concludes that the pursuit of a logic of restraint as a 'pragmatic middle way' has dominated efforts to construct and maintain nuclear order, based on an acceptance of those that can and cannot legitimately possess nuclear weapons, as well as limitations on the development and use of nuclear energy for civilian purposes.[19]

A constant thread in recent parts of Walker's work is a fear that nuclear order is in serious decline. Indeed, his 2011 book was 'was written against a background of anxiety' of an 'unstoppable descent into more profound and dangerous disorder'.[20] Walker cites the

[15] William Walker, *Weapons of Mass Destruction and International Order,* Adelphi Paper No. 370 (London: International Institute for Strategic Studies, 2004), p. 28
[16] Ibid, p. 24.
[17] Walker, *A Perpetual Menace*, pp. 5-6.
[18] Ibid, fig. 1.1, p. 24.
[19] Ibid, p. 5.
[20] Ibid, p.3.

former George W. Bush administration in contributing to this disorder, notably through the pursuit of counter-proliferation and NMD. Other negative developments occurred in the late 1990s and early 2000s, such as nuclear tests in South Asia and the prospect of acts of catastrophic terrorism using WMD.[21] Walker thus calls for a re-orientation of nuclear order towards disarmament since it is 'the movement towards disarmament, and trust that such movement is taking place, that matters'.[22]

So far, there has been no major alternative to Walker's two systems/three logics definition.[23] Ashok has focused on the role of rogue states in the nuclear order, identifying different 'nuclear worlds' inhabited by the five legitimate nuclear weapons states, illegitimate/rogue nuclear armed states, as well as non-state actors and the NPT regime.[24] In other work, he defines nuclear order in terms of US nuclear primacy and double standards, bargains within the NPT, and a non-proliferation norm.[25] Elsewhere, Hassner writes of an NPT based order, a model that emerged over three other potential models: disarmament, a world nuclear government and a fully nuclear-armed world.[26] Like Walker, Hassner considers the nuclear order to be under severe strain, but points to a wider decline in international order, the dominance of deterrence, and hypocrisy as the source of decline. As a consequence, he is less optimistic than Walker about reconstituting nuclear order.

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[21] Walker, *Weapons of Mass Destruction*, pp. 47-59.

[22]William Walker, 'International nuclear order: a rejoinder', *International Affairs*, Vol. 83, No.4, 2007, p. 751.

[23]Daniel Deudney has an interesting chapter in his book *Bounding Power* on the implications of nuclear weapons for world order. He outlines several approaches to the global governance of nuclear weapons: 'nuclear one worldism' (nuclear weapons pose a revolutionary challenge to world order and require a world state); 'nuclear strategism' (nuclear weapons are not revolutionary and therefore do not alter world order); 'deterrence statism' (nuclear weapons have a stabilising effect on world order, this is the dominant position of IR theorists); and 'federal-republican nuclear one worldism' (which emphasises the importance of mutual restraint). See *Bounding Power: republican security theory from the polis to the global village* (Princeton: Princeton University Press, 2006), pp. 244-264.

[24]Kapur, 'Rogue states and the international nuclear order', pp. 425-434.

[25]Ashok Kapur,'New Nuclear States and the International Nuclear Order' in T.V.Paul, R.J. Harknett and J.J. Wirtz, eds., *The Absolute Weapon Revisited, nuclear arms and the emerging nuclear order* (Ann Arbor: University of Michigan, 1998), pp. 237-261.

[26]Peter Hassner, 'Who killed nuclear enlightenment?' *International Affairs*, Vol. 83, No.3, 2007, pp. 455-467.

Taken all together, of these writings, Walker leads the intellectual effort in defining nuclear order. However, more clarity would be useful on how the two systems/three logics relate to one another, particularly in terms of the balancing required to underpin the logic of restraint. For instance, extended nuclear deterrence, part of the system of military abstinence, strengthens the logic of restraint but also arguably works against disarmament and thus has a foot, albeit indirectly, in the system of military engagement. This cross-over is important since Walker suggests that for mutual restraint to work, a balance of the systems is needed. In addition, why nuclear deterrence is a 'ghost at the table' at NPT review conferences and similar settings but nevertheless considered 'king' deserves further exploration, especially if global nuclear order is to be reformed.

More generally, beyond Walker, the nuclear order debate faces three challenges. First, the idea remains inadequately defined, rendering the term vague and open to contradictory definitions. Most analysis is descriptive and centred on the NPT. Realist analysis is particularly limiting since it is focused on the major powers and a critique of the NPT, excluding from analysis not just norms and institutions but also the concerns and influence of non-nuclear states as well as the role of justice, legitimacy and morality within nuclear order. In addition, nuclear order is poorly grounded in history, confining itself to US, Soviet/Russian and occasionally Western European, narratives of global nuclear history.[27] Wider theoretical discussions are also absent from the debate, such as those related to order, regimes and institutions in International Relations. For instance, the emerging literature on international regime complexity theory is helpful in determining how systems and sub-orders within nuclear order –to be discussed later in this chapter--

[27]For instance, specific, but nonetheless excellent, studies such as Margaret Gowing, *Britain and Atomic Energy 1939-1945* (London: Macmillan, 1964) and Richard Smoke, *National Security and the Nuclear Dilemma: An introduction to the American Experience in the Cold War* (New York: McGraw-Hill, 1993).

might undercut or underpin one another.[28] In addition, with the exception of a few Indian and Chinese scholars, academic interest does not extend beyond the western sphere. [29]

Second, studies of nuclear behaviour have centred almost exclusively on explaining proliferation and non-proliferation, leading to a one-sided analysis of nuclear behaviour and an obsession with the NPT.[30] Third, the debate suffers from in-fighting between what Ruhle labels, rather confusingly, 'liberal arms controllers' (in which he includes Walker) and 'strategic analysts'.[31] This in-fighting has been compounded by fears that the actual nuclear order is in decline - a subject touched upon here but discussed in greater detail in chapter six. These two tendencies --intellectual in-fighting and an over-fixation on the end of nuclear order-- have stifled the debate by oversimplifying the concept, as well as injecting an alarmist approach to analysis.

With these challenges in mind, and c*ontra* Brad Roberts, it is argued here that a useful starting point in defining nuclear order is to begin with a study of its main characteristics: namely the purpose, history and structure of nuclear order.

Purpose of Global Nuclear Order

Existing work on nuclear order largely ignores questions of purpose. One exception is Walker, for whom the purpose is to reconcile competing imperatives -- armament and disarmament-- according to the logic of restraint.[32] This approach has considerable merit, and it is useful to draw out these imperatives and make a distinction

[28] See Daniel W. Drezner, The Power and Peril of International Regime Complexity, The Fletcher School, Tufts University, February 2007, http://www.princeton.edu/~smeunier/Drezner.pdf [accessed 20 June 2011]; and Karen J. Alter and Sophie Meunier, 'The Politics of International Regime Complexity', *Perspectives on Politics*, Vol. 7, No. 1, March 2009, pp. 13-24.

[29]N.S. Sisodia, V. Krishnappa and Priyanka Sigh, *Proliferation and Emerging Nuclear Order in the Twenty First Century* (New Delhi: Academic Foundation, 2009); and Pan Zhenqiang, 'The Changing Strategic Context of Nuclear Weapons and Implications for the New Nuclear World Order' in Christopher Twomey, ed., *Perspectives on Sino-American Strategic Nuclear Issues* (New York: Palgrave Macmillan, 2008).

[30]See William C. Potter and Gaukhar Mukhatzhanova, 'Divining Nuclear Intentions: A Review Essay', *International Security*, Vol. 33, Issue 1, Summer 2008, pp. 139-169

[31]Micheal Ruhle, 'Order and disorder in the second nuclear age', *Internationale Politik*, Vol. 7, No.4, 2006, pp. 18-24.

[32]Walker, 'International nuclear order', p. 751.

between short and long term purposes. For instance, those that advocate disarmament, in particular non-nuclear armed states, might argue that the ultimate purpose of nuclear order is the total elimination of nuclear weapons. This would contribute to world peace because it would render the use of nuclear weapons, intentional or otherwise, impossible. Indeed, for Walker, 'all states should work over time to dissolve the system of deterrence to create an international order in which nuclear weapons were no longer present'.[33] In other words, the goal is a non-nuclear order. However, an alternative view would consider the purpose of nuclear order similar to that of the NPT regime: to prevent the further spread of nuclear weapons. This view is based on a variety of perceived dangers including those posed by less stable nuclear weapons states, states without safeguards preventing accidental launch, and non-state actors threatening to use nuclear weapons against the west. It is also a view promoted by great powers since they have a particular interest in avoiding the dilution of their power. A third perspective favouring the deterrent value of nuclear weapons would argue that the purpose of nuclear order is strategic: it rests on improving the effectiveness of deterrence, thereby preventing the escalation of crises to the nuclear level. Arms control enthusiasts are likely to support this view, arguing that the purpose of nuclear order is to manage nuclear arms.

It would seem, then, that the purpose of nuclear order depends upon where one sits. For disarmers, it is transformative: a non-nuclear order. For those that promote deterrence, arms control or non-proliferation, the purpose is improving and maintaining the status quo of nuclear order. Crucially, though at odds with each other in the long term, they share a common purpose in the short term: strategic stability. Indeed, as Walker highlights, disarmament would need to respect the requirements of strategic stability.[34]

[33]Ibid, p.723.
[34]Ibid, p. 722.

What is meant by strategic stability? Traditionally, studies in the military and nuclear field trace strategic stability back to Mutual Assured Destruction (MAD) between the US and the USSR. In 1976, former US Deputy Secretary of Defense Nitze defined strategic stability in terms of minimizing both the threat and actual use of nuclear weapons.[35] Since the end of the Cold War, formulations of strategic stability go beyond a US-Russian focus to include China, and different conceptions of deterrence beyond MAD.[36] Indeed, the term features prominently in the 2010 US Nuclear Posture Review, yet rather problematically, the term is left undefined. Interviews with the US and Chinese academic and policy communities suggest that they too are unsure of what it means.[37] More problematically, history tells us that stability can be a precarious thing: it might not exist in actuality but prove illusionary, existing only in leaders' minds.[38] Nevertheless, in the nuclear context, one could argue that strategic stability exists when the actions of one side do not spark an action-reaction cycle that alters the basic strategic situation (either because both sides understand the action is limited or because the other side reacts in ways that restore the status quo).[39] Russian analysis shares this view, defining strategic stability as a state of strategic relations where there is no incentive for first strike, highlighting how this concept is intrinsically linked to principles of nuclear deterrence.[40] Chinese analysis of strategic stability, as offered by Li Bin and Nie Rongyi, highlights two main goals.[41] The first is crisis stability, in particular confidence building measures and improved communication so as to minimize misconceptions and build trust between states. The

[35]Paul Nitze, 'Assuring Strategic Stability in an Era of Détente', *Foreign Affairs*, Vol. 54, No. 2, 1976, pp. 207-232.
[36]Walter Slocombe, 'Strategic Stability in a Restructured World', *Survival*, Vol. 32, No. 4, 1990, pp. 299-312.
[37]Author interviews in Washington DC, 17 June 2010 and 5 August 2010 (No. 45); in San Diego, 2 August 2010 (No. 3); and in Beijing, 19 August 2009 (No. 21), 30 October 2010 (No. 35), 20 July 2011 (No. 42).
[38] I thank Professor William Walker for this point.
[39]Author interview, San Diego, 2 August 2010 (No. 3).
[40] Alexei Arbatov, Vladimir Dvorkin, Alexander Pikaev and Sergey Oznobishchev, *Strategic Stability After the Cold War*, (Moscow: IMEMO RAN, 2010).
[41] Li Bin and Nie Hongyi, 'Zhong Mei zhanlue wendingxing de kaocha' [Analysis on the strategic stability between China and the US] *Shijie jingji yu zhengzhi*, No. 2, 2008, pp. 13-19.

second goal relates to arms control and, should war breakout, war limitation to prevent escalation to nuclear war.

Thus, strategic stability can be understood in terms of existing strategic nuclear relations, as well as a form of crisis stability and arms control in the balancing of conventional and nuclear capabilities and intentions. Crucially, in the context of nuclear order, strategic stability is based on nuclear deterrence. This means that deterrence based imperatives drive nuclear order. Consequently, the goal of an improved status quo is more likely to be achieved than that of a non-nuclear order. Put differently, for those seeking a transformation of the current nuclear order, the pursuit of strategic stability represents the perpetuation of an unacceptable nuclear status quo.[42]

Global Nuclear History

Various events and ideas have shaped the historical evolution of nuclear order. In the literature it is popular to consider nuclear history in terms of national atomic histories,[43] the evolution of strategic thought since 1945,[44] or the development of the non-proliferation regime.[45] Others have found it useful to consider nuclear history in waves or ages. [46] Here, the history of nuclear order will be explored in three stages: first, from 1945 to the late 1970s, when nuclear order was created; then from the 1980s to late 1990s, during which nuclear order was consolidated; and lastly, in terms of its status in the 2000s.

[42] I thank Professor William Walker for extending this point.
[43]Such as John Lewis and Xue Litai, *China builds the bomb* (Stanford: Stanford University Press, 1988); and Avner Cohen, *Israel and the bomb* (New York: Columbia University Press, 1998).
[44] For example, Fred Kaplan, *The Wizards of Armageddon* (Stanford: Stanford University Press, 1991).
[45] Joseph Nye, 'Maintaining a Non-Proliferation Regime', *International Organization*, Vol. 35, 1981, pp.15-38.
[46] Colin S. Gray, *The Second Nuclear Age* (London: Lynne Rienner, 1999).

Creating Global Nuclear Order (1945-1970s)

As Gavin points out, interest in nuclear weapons predates the Second World War,[47] but prior to 1945, in the initial scramble to develop nuclear weapons in the US against fears that Germany and Japan would develop these first, there existed little sense of nuclear order, or the need for one. Only after the dropping of two atomic bombs, on Hiroshima and Nagasaki in August 1945, and the emergence of the Soviet Union as a nuclear weapons state in 1949 did efforts to develop a nuclear order begin.

In the mid to late 1940s and throughout the 1950s, the prospect of nuclear war and surprise attack were very high. The superpowers were engaged in a fierce arms race, and the US threatened to use nuclear weapons in various crises such as the Korean War (1950-53). Yet efforts to develop nuclear order are discernible. The earliest of these is a focus on disarmament with the 1946 Baruch Plan, which drew heavily from the Acheson-Lilienthal Report of 1946. This plan proposed the dismantlement of the US nuclear arsenal but only after all other states had formally renounced their nuclear weapons and verification was in place. The plan failed but other efforts included the UN Disarmament Commission established in 1952, and the Geneva conference on disarmament in 1955.[48] Fear of nuclear war also spawned anti-nuclear protest movements in the US, Europe and Asia. Other efforts focused on bringing atomic energy under international control, given the excitement at that time over the potential of nuclear energy.[49] The Atoms for Peace, launched in 1953 by US President Eisenhower, fostered technical cooperation between the

[47]Francis J. Gavin, 'Same as ever was, nuclear alarmism, proliferation and the Cold War', *International Security*, Vol. 34, No. 3, 2009/10, p. 33.
[48]David Holloway, 'Nuclear Weapons and the escalation of the Cold War, 1945-1962', in Melvyn Leffler and Odd Arne Westad, eds., *The Cambridge History of the Cold War* (Cambridge: University of Cambridge Press, 2009), pp. 376-397.
[49]Mohamed Shaker, *The Nuclear Non-Proliferation Treaty: Origin and Implementation, 1959-1979*, Vols. I-III (London: Oceana Publications, 1980), pp. 3-20 and pp. 344-345.

US and non-nuclear states, and later facilitated the creation of the International Atomic Energy Agency (IAEA) in 1956.

Beyond efforts to eliminate nuclear weapons and control nuclear technology, the superpowers were focusing on deterrence as a way of managing their nuclear relationship. In fact, both sides were building up their nuclear arsenals throughout this period, reflecting a lack of interest in disarmament. As Freedman[50] and Smoke[51] demonstrate, following bomber and missile gaps and the Cuban Missile Crisis (1962), the US and USSR were driven by a logic of control, seeking different versions of deterrence. The Soviet Union pursued a warfighting strategy whilst the US oscillated between various approaches, from Massive Retaliation to Flexible Response and Limited War until a condition of strategic parity and MAD emerged. By the mid 1960s, then, following the failure of disarmament initiatives,[52] efforts to bring nuclear technology under control, and vigorous debates over MAD, [53] a potential model evolved on which to base nuclear order driven by non-proliferation but based on nuclear deterrence and supported by arms control. For the superpowers, the goal of this model from the outset was strategic stability, based on MAD and reinforced by arms control and non-proliferation.[54] The model was also driven by heightened fears of proliferation; by then, the UK (1952), France (1960) and China (1964) were nuclear states.

A major aspect of this model was the NPT. The NPT contains important bargains balancing out the competing imperatives of non-proliferation, disarmament and the peaceful uses of nuclear energy. Under these bargains, nuclear weapons states would

[50]Lawrence Freedman, *The Evolution of Nuclear Strategy* 2nd edn. (London: Macmillan, 1989), pp.76-89.
[51]Richard Smoke, *National Security and the Nuclear Dilemma: An introduction to the American Experience in the Cold War* (New York: McGraw-Hill, 1993), pp.72-75.
[52] Disarmament was not fully abandoned; the 18-Nation Disarmament Committee (1961) led to the Conference on Disarmament in 1978.
[53]Helga Haftendorn, *NATO and the Nuclear Revolution* (Oxford: Oxford University Press, 1996).
[54]Roberts, 'All the king's men', p. 524.

initiate efforts to work toward disarmament; second, nuclear states pledged to not transfer nuclear weapons or control over nuclear weapons to non-nuclear states; and third, nuclear states would recognize the 'inalienable right' of non-nuclear states to nuclear energy for civilian uses. In exchange, non-nuclear states promised not to develop nuclear weapons.[55] Crucially, while these bargains considered disarmament and non-proliferation mutually reinforcing, in reality, the NPT signalled a shift from disarmament towards non-proliferation and arms control. Indeed, the NPT was preceded by a number of treaties designed to reduce the significance of nuclear weapons in states' security strategies, including the Hotline agreement (1963), the Partial Test Ban Treaty (1963), and the Tlatelolco Treaty (1967). Later came the Strategic Arms Limitation Talks (SALT I, 1972), the Anti Ballistic Missile Treaty (ABM, 1972), the Prevention of Nuclear War Agreement (1973), the Threshold Test Ban Treaty (1974) and the Peaceful Nuclear Explosion Treaty (1976).[56]

In sum, three competing impulses initially drove superpower thinking on nuclear matters: the need to develop nuclear weapons, to control nuclear technology, and to eliminate nuclear weapons. These eventually gave way to two more enduring imperatives: ways in which these weapons could be used for deterrence, and how to control these weapons. As a consequence, by the 1960s, a model for nuclear order started to form based not on disarmament but on deterrence, non-proliferation and arms control.

Consolidating Nuclear Order (1980s-1990s)

In the second stage, the consolidation of nuclear order took place amid transition in the wider global order: the end of the Cold War. In December 1991, the Soviet Union disintegrated into fifteen newly independent states and the US emerged as the sole

[55]Shaker, *The Nuclear Non-Proliferation Treaty*, pp. 3-26.
[56] For full texts of these treaties, see Federation of American Scientists, Arms Control Treaties, http://www.fas.org/nuke/control/index.html [accessed 2 April 2010]

superpower. Important events also took place in the Middle East, most notably the Persian Gulf War in 1991. All together, these developments had a significant impact on the consolidation of nuclear order, and highlighted that the US would now lead, in direct terms, on matters related to that order.

Non-proliferation and arms control became the focus of US foreign policy, aiding the organizational and institutional development of nuclear order. The immediate challenge was proliferation based.[57] The breakup of the USSR had resulted in the Soviet nuclear arsenal scattered across Russia, Ukraine, Belarus and Kazakhstan, but tactical weapons were present in a number of other republics, under army control.[58] To address this problem the Cooperative Threat Reduction Program was launched in 1991, and by 1996, all three former Soviet republics were de-nuclearised. In the early 1990s, Russian and American efforts also focused on arms control, Strategic Arms Reduction Talks (START I) negotiations were accelerated, a testing moratorium was established (leading to the CTBT) and production of new nuclear weapons halted. In addition, in 1993 a programme was initiated to strengthen IAEA safeguards, what would later become the Additional Protocol in 1997; and in 1995, the NPT was indefinitely extended. Elsewhere, China joined the NPT in 1992 and the CTBT in 1996;[59] in 1991, South Africa unilaterally gave up its nuclear programme and joined the NPT; and by 1998, both Argentina and Brazil had joined the NPT as non-nuclear states.

In the late 1990s, however, new nuclear states emerged, and momentum in arms control and non-proliferation began to stall. More concretely, following US Republican Party concerns with military superiority, the Clinton administration had been quietly

[57]Gilles Andreani, 'The Disarray of US Non-Proliferation Policy', *Survival,* Vol. 41, No. 4, 1998, pp.42-61.
[58] Moscow had these removed and transported back into Russia.
[59]China also issued security assurances in April 1995, and announced support for the FMCT. Prior to this, China joined the CD in 1980 and the IAEA in 1984. See Ann Kent, *Beyond Compliance, China, International Organizations, and Global Security* (Stanford: Stanford University Press, 2007).

revisiting its nuclear posture since 1997.[60] The US was concerned by China's military modernization, evidence of nuclear activities in North Korea and Iraq, as well as evidence of the transfer of sensitive technology to states like Iran, Iraq, Saudi Arabia, Pakistan, Syria and Algeria.[61] On 13 October 1999, the US Senate voted to reject the CTBT and throughout the late 1990s the US flirted with the idea of National Missile Defense (NMD) threatening the ABM treaty which countries such as China considered the basis for strategic stability.[62] Beyond China and the US, in 1998, India and Pakistan exploded nuclear devices and refused to join the NPT. In July 1998, Iran launched a Shihab-3 missile and in August North Korea tested a long range Taepo Dong missile. Terrorist threats also increased following the attacks on the US World Trade Center in 1993 and on US embassies in Kenya and Tanzania in 1998. The US, in particular, feared terrorist groups' acquisition of weapons of mass destruction and this further prompted Washington to emphasize counter-proliferation rather than non-proliferation.[63]

In sum, the late 1980s and early to mid 1990s represented a relatively positive period during which arms control and non-proliferation measures developed within nuclear order. However, serious challenges emerged in the late 1990s, threatening to undo the progress made on institutional aspects of nuclear order earlier in that decade.

Maintaining Nuclear Order (2000s)

In the third and current stage, many consider nuclear order to be under significant strain. As a result, a debate on how best to maintain or rebuild that order has emerged.

[60]Willian Arkin and Hans Kristensen,'Dangerous Directions' *The Bulletin of Atomic Scientists*, Vol. 52, No.2, March-April 1998, pp.26-31.
[61]Evan Medeiros, *Reluctant Restraint: The Evolution of China's Nonproliferation Policies and Practices, 1980-2004* (Stanford: Stanford University Press, 2007), pp.30-88.
[62]Wu Xing Zuo, 'Meiguo yanfa daodan fangyu xitong weihai guoji anquan' [US BMD: Endangering the World Security] *Xiandai guoji guanxi* [Contemporary International Relations] No.9, October 1999, pp. 16-18.
[63]Andreani, 'The Disarray of US Non-Proliferation Policy', p. 46.

In this debate, each side draws on different empirical examples to make their case. On one side, Walker argues that the early to mid 2000s have presented nuclear order with grave challenges. We have witnessed terrorist attacks on New York and Washington in September 2001, a war in Iraq justified on the grounds of suspected WMD programmes, North Korea's withdrawal from the NPT in 2003 and testing of a nuclear device in 2006 and 2009, the AQ Khan network exposed by British and American governments in 2004, the drastic failure of the 2005 NPT Review Conference, Iranian and Syrian disregard of the IAEA, increasing global demands for nuclear energy, and the US-India civilian nuclear deal first announced in 2005.[64] Walker lays particular blame on the Bush administration's push for NMD following the decision to abrogate the ABM Treaty in 2002, as destabilizing to nuclear order. In addition, longstanding unfulfilled promises have undermined nuclear order, such as the failure to ratify the CTBT, lack of progress on the Fissile Material Cut-off Treaty (FMCT), or establishing a nuclear weapons free zone in the Middle East.[65]

On the other side of the debate, a less alarmist case is made. For Pilat,[66] the US has done much to support nuclear order through initiatives such as the Proliferation Security Initiative (PSI). Extending this further, the world is not witnessing decline but an adaptation to rising challenges (such as nuclear terrorism) and a readjustment of priorities towards new types of deterrence and counter-proliferation. Second, Gavin highlights how a misinformed view of history might perpetuate 'nuclear alarmism'. Nuclear order has faced challenges more serious than those it faces today, such as the Cuban Missile Crisis in 1962

[64]Walker, 'Nuclear enlightenment and counter-enlightenment', pp. 431-453.
[65]Report of the Commission of Eminent Persons on the Future of the Agency, 'Reinforcing the global nuclear order for peace and prosperity, the role of the IAEA to 2020 and beyond', GOV/2008/22-GC(52)/INF/4, 23 May 2008.
[66]Joseph F. Pilat, 'The end of the NPT regime?' *International Affairs*, Vol. 83, No. 3, 2007, p. 479.

or China's nuclearisation in 1964.[67] This view thus credits nuclear order with significant endurance and flexibility. It also points to positive developments: Libya abandoned its nuclear efforts in 2003, China joined the Nuclear Suppliers Group in 2004, and the AQ Khan network has been discovered and stopped.

The debate outlined above has resulted in a growing sense that nuclear order has reached an important juncture, and it has led to the inspiration of several initiatives. The first is a 'nuclear spring' initiated by US President Obama in 2009.[68] Chiefly focused on restoring confidence in nuclear order, major aspects of this initiative include three important developments by April 2010: revised US nuclear, ballistic missile defence and space posture reviews, a new START treaty between the US and Russia, and the first global Nuclear Security Summit. Added to this, the NPT Review Conference in May 2010 fared much better than the previous one in 2005.[69] The second initiative calls for a 'nuclear weapons free world'.[70] Crucially for my interest in nuclear order, there are important differences between the two efforts with the first focusing on shoring up the existing nuclear order, and the second seeking to transform nuclear order into a non-nuclear order. A second difference is that nuclear spring has a wider global appeal, at least among governmental elites in most nuclear weapons states, than the campaign for a nuclear weapons free world.[71]

In summary, the history of global nuclear order can be understood in light of competing imperatives throughout its creation (1945-1970s), consolidation (1980s-1990s)

[67]Gavin, 'Same as it ever was', pp. 16-17.
[68]Obama used the term in a speech in Prague on 5 April 2009, http://prague.usembassy.gov/obama.html [accessed 6 April 2009]
[69]William Potter, Patricia Lewis, Gaukhar Mukhatzhanova and Miles Pomper, 'The 2010 NPT Review Conference: Deconstructing Consensus', CNS Special Report, 17 June 2010.
[70]George Schultz, William Perry, Henry Kissinger and Sam Nunn, 'Toward a nuclear free world', *Wall Street Journal*, 4 January 2007.
[71]The nuclear free world idea has support in the UK, Japan and Australia, but in France, the idea is vehemently rejected.

and current period of uncertainty. These imperatives include: whether to build a nuclear arsenal; how to control the spread of these weapons; how to use them politically so they have strategic value; and how to eliminate them. Of these imperatives, the development, control, and use of nuclear weapons dominate, leading to a focus on deterrence, arms control and non-proliferation in shaping nuclear order since 1945.

Structure of Global Nuclear Order

Global nuclear order is managed and influenced by several actors, of which the most important are the nuclear armed states. At present there are nine nuclear armed states (declared and undeclared) in the world: the US, Russia, France, the UK, China, India, Pakistan, Israel and North Korea. Of these, Krause and Walker respectively argue that the US, as the oldest, largest and most advanced nuclear power in the world, acts as the steward of nuclear order.[72] Nevertheless, as Roberts highlights, Russia, the UK, France and China also act as the architects and guarantors of nuclear order.[73]

Nuclear armed states are neither unitary nor equal actors in the nuclear order.[74] They differ in terms of capabilities (qualitatively and quantitatively); doctrines (from first use in Russia to no first use in China) and strategies, (such as warfighting or minimal deterrence). These differences have important implications for nuclear order. First, states such as China have sought to identify themselves as a second tier or middle sized nuclear power.[75] This is important because such a power might feel less bound to promote nuclear order. Second, only the original signatory states to the NPT (the US, Russia, UK, France

[72]Krause, 'Nuclear proliferation and international order, reform of the nuclear non-proliferation regime', p. 13; and Walker, 'Nuclear order and disorder', pp.709.
[73]Roberts, 'All the king's men', p.529.
[74]On how national organizational cultures affect state behaviour, see Scott Sagan, 'The perils of proliferation: organization theory, deterrence theory and the spread of nuclear weapons', *International Security*, Vol. 18, No.4, 1994, pp. 66-107.
[75]Weixing Hu and John C Hopkins, *Strategic views from the second tier: the nuclear weapons policies of France, Britain, and China* (London: Transaction Publishers, 1995).

and China) are recognized nuclear weapons states under the NPT.[76] For Paul, this inequality makes for a discriminatory order. Consequently, those that are not recognized, such as India and Pakistan, have used this as an excuse for not adhering to an order that discriminates against them. [77]

Beyond nuclear weapons states, non-nuclear weapons states may 'not have the power to create order but they do have the power to cause some disorder'.[78] States like Iran are of immediate proliferation concern as many fear a nuclear armed Iran would encourage others in the region to develop a nuclear weapons capability. There are also states, such as Japan, with latent nuclear weapons capabilities able to arm in a matter of months (were there to be a domestic consensus to do so).[79] Non-state actors also play a role: nuclear terrorism is considered particularly problematic, with severe implications for maintaining deterrence and/or derailing disarmament.[80] More positively, groups such as Pugwash try to promote disarmament; and others try to strengthen nuclear safety and security, for instance the World Association of Nuclear Operators (WANO) within the civilian nuclear industry.

The positive influence of non-nuclear weapons states should not be overlooked either. Many have tried in a direct way to promote a stable nuclear order, including the Irish Republic and its promotion of disarmament resolutions in the UN between 1950 and 1961 as well as the non-aligned movement pressing for the NPT. Similarly, Australia and Japan lead the disarmament agenda today. In addition, international security bodies, namely the UN Security Council and General Assembly as well as the IAEA and

[76]Only those states that tested nuclear weapons prior to 1 January 1967 are considered legitimate nuclear weapons states.
[77]T.V. Paul, 'The systemic basis of India's challenge to the global nuclear order', *The Nonproliferation Review*, Vol.6, No.1, 1998, pp. 1-11.
[78] Roberts, 'All the king's men', p. 529.
[79]Maria Rost Rublee, 'The Nuclear Threshold States, Challenges and Opportunities Posed by Brazil and Japan', *The Nonproliferation Review*, Vol. 17, No.1, 2010, pp.50-70.
[80]Commission on the Prevention of WMD Proliferation and Terrorism, *World at Risk*, December 2008, http://www.absa.org/leg/WorldAtRisk.pdf [accessed 20 February 2010]

Conference on Disarmament (CD), play an important role by creating and enforcing rules and accepted standards of nuclear behaviour. As Boulden, Thakur and Weiss write in *The United Nations and Nuclear Orders*, the Security Council is the main setting in which to discuss nuclear crises, set standards (e.g. with resolution 1540)[81] and enforce safeguards.[82] Likewise, the General Assembly provided a platform for the 1946 Baruch Plan and the 1953 Atoms for Peace programme. Similarly, the CD was an important venue in which the 1996 CTBT was negotiated. For its part, the IAEA has led the way in fostering a 'nuclear safety culture'[83] and is headed by a Director General who can wield significant influence over nuclear crises, such as was the case with the former Director General, ElBaradei, vis-à-vis Iraq.

In addition to the structural aspects highlighted above, in defining nuclear order one also ought to consider how regimes, regions and wider global order relate to nuclear order. This is useful exercise so as to ascertain the inner workings of nuclear order, and the extent to which they underpin or undercut one another.

The NPT regime and its relationship to nuclear order is a good starting point for analysis since there exists fuzziness in the literature, with analysts using the terms 'NPT regime' and 'nuclear order' interchangeably. This is problematic since there is more to nuclear order than the NPT regime. First, regimes serve, and are subordinate to world order.[84] As Haggard and Simmons argue, 'regimes may facilitate order and stability but are

[81] United Nations Press Release SC/8076, 'Security Council decides all states shall act to prevent proliferation of mass destruction weapons, Resolution 1540, 4 April 2004, http://www.un.org/News/Press/docs/2004/sc8076.doc.htm [accessed 2 March 2010]

[82] Jane Boulden, Ramesh Thakur and Thomas Weiss, eds., *The United Nations and Nuclear Orders* (New York: United Nations University Press, 2009), pp. 3-23.

[83] Report of the Commission of Eminent Persons, 'Reinforcing the global nuclear order for peace and prosperity', p. viii.

[84] For Krasner, a regime is a set of 'principles, norms, rules and decision making procedures' in *International regimes* (Ithaca: Cornell University Press, 1983), p.1.

not coterminous with them'.[85] Likewise, for Keohane, 'we study international regimes because we are interested in understanding order in world politics'.[86]

Second, regimes are more limited in their scope than the order they serve. The NPT regime exists to prevent the further spread of nuclear weapons. Yet, there is disagreement over the scope of the regime. For Walker, the NPT is ultimately a disarmament treaty, affording the regime scope beyond the prevention of further nuclear weapons states. Indeed, according to Walker, 'non-proliferation is disarmament by another name' insofar as it entails the foregoing of armament and/or the active renunciation of nuclear weapons.[87]A similar view is held by those who include treaties such as the Outer Space Treaty in the regime. Others, such as Paul and Brzoska, take the opposite view, and argue the more that is included the less coherence the regime has in terms of goals and principles.[88] Furthermore, a strict reading of Article VI of the NPT only requires states to 'enter into negotiations towards disarmament in good faith', with no specific time-frame.[89] Thus, the NPT remains, so far, only an inspirational tool of disarmament.

Third, given that regimes are more limited in scope than the orders they serve, to equate the NPT regime with nuclear order would exclude from analysis the wider role of nuclear deterrence in national security policy, measures related to arms control, and actors like India and Pakistan not being covered by the regime. Nuclear order is thus the more holistic background against which to assess nuclear behaviour.

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[85]Stephen Haggard and Beth Simmons, 'Theories of international regimes', *International Organization*, Vol. 41, No.3, 1987, p. 496.
[86]Robert Keohane, 'The demand of international regimes', *International Law and International Relations*, Vol. 36, No.2, 1982, p. 18.
[87]Walker, 'International nuclear order', p. 752.
[88]T.V. Paul, 'Security Conditions and Security Cooperation: Explaining the Persistence of the Nuclear Non-proliferation Regime 1', *Cambridge Review of International Affairs*, Vol. 16, No. 1, 2003, pp. 135-154; and Michael Brzoska, 'Is the nuclear non-proliferation system a regime? A comment on Trevor McMorris Tate', *Journal of Peace Research*, Vol. 29, No. 2, 1992, pp. 215-220.
[89] United Nations, full text of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), http://www.un.org/en/conf/npt/2005/npttreaty.html [accessed 12 October 2010]

Beyond regimes, regions may be viewed as subsets of global nuclear order.[90] Roberts distinguishes between regional nuclear subsets and subsystems within regions.[91] To understand this approach it is useful to explore an example, such as Asia, a key region within global nuclear order. Asia contains many subsystems: Central Asia (Russia and former Soviet Republics), South Asia (India and Pakistan as the major states), Southeast Asia (ASEAN states) and Northeast Asia. China contributes to the Asian subset and related subsystems, especially Northeast Asia and South Asia. Components of the Northeast Asian subsystem include the US, China, Japan, South Korea, North Korea and Taiwan; and institutional arrangements such as the Council for Security Cooperation in the Asia Pacific (1993), the North East Asian Security Cooperation Dialogue (1993), the ARF (1994) and East Asia Summit (2005). Certain proposals like ASIATOM (1995) and agreements reached on the Korean Peninsula since the 1990s and at the Six Party Talks since 2003 (where realized) are methods of building nuclear order. [92]

What does this all mean for my definition of nuclear order? At a global level, in locating nuclear order there is much agreement with Walker's arguments. First, there is a *condition* of order within which nuclear order is situated. Here order is contrasted with international disorder. Hedley Bull offers a nuanced reading of this condition: it is goal orientated and is 'a pattern of activity that sustains the most basic goals of international society'.[93] These goals include security against disorder and violence (for instance nuclear war), observance of agreements (such as the NPT) and stability of property. Chan's work

[90]The regional aspect of nuclear order is largely ignored in the literature; see Walker in 'Nuclear order and disorder', p. 723, ft. 46. This section reflects wider analysis on regional security complexity theory in Barry Buzan and Ole Waever, *Regions and Powers: the Structure of International Society*, (Columbia: Columbia University Press, 2003).
[91]Brad Roberts, 'East Asia's Nuclear Future: A Long-term view of threat reduction', *IDA Paper* P-3641, August 2001.
[92]Muthiah Alagappa, ed., *The long shadow: nuclear weapons and security in 21st century Asia* (Stanford: Stanford University Press, 2008).
[93]Hedley Bull, *The Anarchical Society: a study of order in world politics* (Basingstoke: Macmillan, 1995), p.8.

adds to this definition: order may refer to a pattern of status among actors, a normative ideal (preferred vision of order) but also a description of policy behaviour by a particular country.[94]

In sum, within nuclear order there exists a goal-orientated (strategic stability) *condition* and *pattern* of order. Aspects of the pattern --its purpose, history and structure-- have been highlighted above, and its core elements will be elaborated below. Nuclear order can also be located as *an* order within or alongside other orders subordinate to *the* global order. Applying Chan's definition, the focus of analysis here is on the creation, consolidation and maintenance of nuclear order, through state actions (China's) in reference to that order.

Core Elements of Global Nuclear Order

So far, this chapter has explored the purpose, history and structural aspects of nuclear order as well as how nuclear order relates to regimes and wider regional and global orders. As highlighted earlier, Walker's definition is insightful but more clarity is needed on how the two systems/three logics relate to each other, as well as why nuclear deterrence is considered 'king' within nuclear order. This thesis argues that nuclear order is based on four core elements: nuclear deterrence, arms control, non-proliferation and disarmament. These four elements have been selected because they represent enduring features of global nuclear politics and the study of nuclear weapons since 1945. However, as Walker argues, they represent the quest for order within nuclear order, rather than being objectives in themselves.[95] More crucially, this widening of the two systems/three logics definition to a more basic four elements model is useful as it enhances the ability to uncover the inner

[94]Steve Chan, 'Chinese perspectives on world order', in T.V.Paul and John A.Hall, eds., *International Order and the Future of World Politics* (Cambridge: Cambridge University Press, 1999), p. 197.
[95] Walker, *A Perpetual Menace*, p. 2.

workings of nuclear order, in particular the ways in which the elements complement and contradict each other.

The first core element is nuclear deterrence.[96] According to Gerald Segal, 'no aspect of contemporary nuclear strategy is as crucial as the concept of deterrence'.[97] Phil Williams has defined deterrence as 'an attempt…to prevent an adversary from undertaking a course of action…by threatening to inflict unacceptable costs upon the adversary'.[98] For Glenn Snyder, deterrence is the 'power to dissuade' and influence the enemy's intentions.[99] Patrick Morgan sees deterrence as a twisted form of persuasion, akin to an offer the Mafia *godfather* would make, one that you would dare not refuse.[100] In essence, it encompasses denial (of victory in a nuclear war) and punishment (victory at unacceptable costs), subscribing to a paradoxical logic that demands maximising threats in order to prevent their manifestation. [101]

Nuclear deterrence is also a condition between nuclear armed states (like MAD) and a strategy (such as virtual, extended, minimal or limited deterrence). In Asia, predominant strategies are extended nuclear deterrence (a nuclear guarantee provided by the US to Japan, South Korea and possibly Taiwan), existential deterrence (North Korea) and minimal deterrence (China).[102] In operating strategies, ambiguity and transparency can be crucial. Communication of intention and capability are also requirements for credible

[96] This is different to compellance, which is a more active threat and commitment to use force, see Alagappa, *The Long Shadow*, p. 84; and Thomas Schelling, *Arms and Influence* (New Haven: Yale University, 1966).
[97]Gerald Segal, 'Strategy and 'Ethnic Chic'', *International Affairs*, Vol. 60, No.1, 1983/84, p.15.
[98]Phil Williams, 'Nuclear Deterrence' in John Baylis, ed., *Contemporary Strategy* (London: Holmes and Meir, 1975), p.113.
[99]Glenn Snyder, 'Deterrence: A Theoretical Introduction' in John Garnett, ed., *Theories of Peace and Security* (London: Macmillan), pp. 106-112.
[100]Patrick Morgan, *Deterrence: a conceptual analysis* (London: Sage, 1977), p.26, p. 14 and p. 20.
[101]Glenn Snyder, *Deterrence and Defence, toward a theory of national security* (NJ: Princeton University Press, 1961), p. 50.
[102] See Alagappa, *The Long Shadow*, pp. 87-91.

deterrence.[103] A 1995 US report recommends that policy should be clear on the negative consequences of a nuclear response but ambiguous on the details of the actual response.[104]

The perceived value of deterrence has undergone various crises of confidence since 1945. A consistent challenge is the uncomfortable moral basis of its threat: massive punishment and potential global annihilation.[105] Walker has therefore argued that one should not 'pay open homage to nuclear deterrence'.[106] Indeed, recent calls for a nuclear weapons free world include efforts to delegitimize deterrence.[107] Other challenges are technology based, namely missile defence, from the Strategic Defense Initiative (1984) to NMD, which threaten to undermine deterrence by potentially offering a defence against nuclear weapons. Another challenge is related to security threats, since the breakup of the Soviet Union, scholars have predicted that deterrence would lose relevance. The tragic events of 9/11 have also cast into doubt the relevance of deterrence when applied to non-state actors.[108]

However, the relevance of deterrence has been restated every time it has been challenged.[109] First, it remains a cornerstone of national security policies, as noted in the 2010 UK Strategic Defence and Security Review, China's 2008 Defense White Paper, the US 2010 Nuclear Posture Review, and NATO's Strategic Concept released in November 2010. Second, deterrence is no longer justified according to an overwhelming Soviet threat, but instead in terms of less certain threats, like the direction of military modernization programmes or the 'irrationality' of a nuclear armed state, with Iran and

[103]William Kaufman, *The Requirements of Deterrence* (Princeton: Princeton University Press, 1956).
[104]Policy Subcommittee of the Strategic Advisory Group, 'Essentials of Post-Cold War Deterrence', 1995.
[105] Robert E. Osgood and Robert W. Tucker, *Force, Order and Justice* (Baltimore: The Johns Hopkins Press, 1967), p. 123.
[106]Walker, 'International nuclear order', p. 752.
[107]Ward Wilson, 'The myth of nuclear deterrence', *The Nonproliferation Review*, Vol. 15, No. 3, November 2008, pp. 421-439.
[108]Austin Long, *Deterrence-from the Cold War to the Long War* (Santa Monica, CA: RAND, 2006).
[109]Edward Warner, 'Nuclear Deterrence Force still Essential', Senate Armed Services Committee, 31 March 1998.

North Korea sometimes used as examples. Third, for Payne, to dismiss deterrence is to deny its perceived value and flexibility beyond MAD.[110] As Waltz highlights, the value of deterrence rests in the constraining effect it has on state behaviour.[111] This value, as Schell has argued, continues even in a non-nuclear order, if only in a virtual and post-existential form.[112] Finally, as demonstrated earlier in this chapter, deterrence is intrinsically woven into the history of nuclear order as well as *the* global order. It is this characteristic that arguably makes it 'king' among the four elements. Rendering nuclear deterrence irrelevant is a massive undertaking, requiring not just change in the *pattern and condition* of nuclear order, but also the fabric of *the* global order.[113]

Arms control, the second core element of nuclear order, aims to reduce the risk, cost and damage of nuclear war. Thomas Schelling and Morton Halperin argue that 'the aims of arms control and the aims of a national military strategy should be substantially the same'.[114] In various works, Hedley Bull demonstrates how arms control might involve a reduction or increase in capabilities so long as strategic stability provided by deterrence is preserved. This is unlike disarmament, which works to dismantle nuclear weapons and deterrence.[115] Rattray emphasises this point, 'the important distinction [*between arms control and disarmament*] centres on what arms control is intended to achieve--lower numbers of weapons or improved security for the parties involved'.[116]

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[110]Keith Payne, 'On Nuclear Deterrence and Assurance', *Strategic Studies Quarterly*, Vol. 3, No.1, 2009, pp. 43-80.
[111]Richard Betts, Scott Sagan and Kenneth Waltz, 'A nuclear Iran: promoting stability or courting disaster?' *Journal of International Affairs*, Vol. 60, No.2, 2007, pp. 135-150.
[112]Jonathan Schell, *The Abolition* (London: Picador, 1984).
[113]Hassner, 'Who killed nuclear enlightenment?', p. 463.
[114]Thomas Schelling and Morton Halperin, *Strategy and arms control* (Washington: Pergamon-Brassey's, 1985), p.142.
[115]Hedley Bull, *The Control of the Arms Race, disarmament and arms control in the missile age* (London: Weidenfeld & Nicolson, 1961), p. 56; and 'The classical approach to arms control, twenty three years after', in Clive Nerlich, ed., *Soviet Power and Western negotiation politics* (London: Ballinger, 1983), pp. 119-128; and 'Arms control and world order', *International Security*, Vol. 1, No.1, 1970, pp. 3-36.
[116]Jeffrey Larsen and Gregory Rattray, eds., *Arms Control towards the 21st* Century (London: Lynne Rienner, 1996), p. 9.

Overall, arms control began in the 1950s as largely an American and Soviet response to rapidly evolving technologies and weapons systems, such as anti-ballistic missiles, and multiple warheads (otherwise known as MIRVs).[117] Arms control soon came to dominate nuclear order, with the US and Soviet Union concluding several treaties, such as SALT I and II (1972 and 1979), ABM (1972) and the INF (1987). In the post Cold War era, major arms control treaties include presidential initiatives between the US and Russia in 1991 and 1992, START I (1991), START II (1993), CTBT (1996), SORT (2002) and the new START (2010). Arms control was dealt a serious blow in 2002 when the US withdrew from the ABM, a treaty considered important to strategic stability by states like China. Arms control has recently gained some momentum with the aforementioned 'nuclear spring'. However, serious obstacles remain, with doubts that the CTBT will be ratified and that negotiations towards an FMCT will be successfully concluded. Added to this, China is unwilling to engage in arms control until the US and Russia drastically cut their arsenals.

Non-proliferation is the third element of nuclear order. Since the 1950s, this element has occupied a high position on the agendas of the anti-nuclear weapons movement, the Soviet Union, the NAM and US foreign policy. Further, unlike deterrence or disarmament, this pillar has its own regime and arrangements on export controls. Export controls include national measures like the catch-all controls in Japan or multilateral institutions such as the Nuclear Suppliers Group (1978) and the Missile Technology Control Regime (1987). Other legal obligations such as the Additional Protocol, UN Security Council Resolution 1540, and strategies of counter-proliferation contribute to the

[117]Thomas Schelling, 'What went wrong with arms control?' *Foreign Affairs*, Vol. 64, No. 2, Winter, 1985, p. 220.

NPT regime by targeting issues like the transfer of nuclear-related technologies to state and non-state actors.

The NPT regime also faces several challenges. Above all, it is considered discriminatory and weak. Second, strategies of counter-proliferation, of which the Proliferation Security Initiative (PSI) is a good example, sit uncomfortably with non-proliferation. This is because of the emphasis placed on pre-emption, and invasive and coercive measures, often in potential violation of international law and national sovereignty. An added challenge relates to the extent to which the NPT can be considered a tool of disarmament, transforming nuclear order. Based on a strict reading of the NPT treaty and its historical record, the NPT regime is currently aiding the preservation, rather than the transformation, of nuclear order.

Disarmament represents the fourth core element of nuclear order. Moral and ethical reasons have typically been cited in support of disarmament, and various civil disarmament movements since the 1950s have contributed to a taboo against nuclear non-use.[118] Scientists and peace activists have been particularly influential in promoting this element. Their efforts resulted in declarations such as the Russell-Einstein Manifesto in 1955,[119] the Canberra Commission in 1997,[120] and the 2000 Abolition Statement.[121]

In the 2000s, this pillar is witnessing resurgence with the nuclear free world movement. A major contribution to this debate is Perkovich and Acton's 2008 *Adelphi Paper*, which called for a nuclear order re-orientated away from deterrence towards

[118]Nina Tannenwald, *The Nuclear Taboo: the United States and the non-use of nuclear weapons since 1945* (Cambridge: Cambridge University Press, 2007), pp. 156-161 and pp. 278-282. For an excellent discussion of the moral dilemma nuclear weapons pose, see Michael Quinlan, *Thinking about nuclear weapons: principles, problems, prospects* (Oxford: Oxford University Press, 2009).
[119] Russell- Einstein Manifesto, 9 July 1955, http://www.pugwash.org/about/manifesto.htm [accessed 10 October 2010]
[120] Report of the Canberra Commission on the Elimination of Nuclear Weapons, August 1996 http://www.dfat.gov.au/cc/CCREPORT.pdf [accessed 10 October 2010]
[121] 2000 Abolition Statement, http://www.abolition2000.org/?page_id=153[accessed 10 October 2010]

disarmament.[122] However, there are serious challenges to this movement. As early as 1959, Herz argued a non-nuclear world could be more dangerous than a world with nuclear weapons.[123] In 2009, Schelling noted that in a disarmed world, a nuclear re-armament is always around the corner, as 'every condition of disarmament is a potential situation of rearmament'.[124] A major crisis might spark a race to re-arm. Further, conventional power would become of increased importance, affecting the relative balances of power that exist between states today.

Beyond the merits or demerits of a disarmed non-nuclear order, radical change would be needed to transition to such an order. First, at a practical level, stronger enforcement and verification mechanisms, as well as cooperation beyond the US and Russia, to China, France, UK, India, Pakistan, Israel, North Korea and Iran would be required. Second, and more crucially, the nuclear free world agenda throws into disarray the traditional role disarmament has played for nuclear order, affording that order legitimacy since 1945. In this vein, one might argue that without the disarmament requirement specified in Article VI as part of the NPT, it is unlikely so many non-nuclear armed countries would have signed this treaty, let alone indefinitely extended it in 1995. However, this legitimacy is based on a promise of a non-nuclear order whose realisation would require the undoing of current nuclear order, especially the core element of nuclear deterrence, which is inherently linked and woven into not just nuclear order, but as suggested earlier here, to global order more broadly defined.

[122]James Acton and George Perkovich, *Abolishing Nuclear Weapons*, Adelphi Paper No.396 (Abingdon: Routledge, for International Institute for Strategic Studies, 2008), p. 103.
[123]John H. Herz, *International Politics in the Atomic Age* (New York: Columbia University Press, 1959), p. 137.
[124]Thomas Schelling, 'A world without nuclear weapons?', *Daedalus*, Fall 2009, pp. 124-129.

The Interactive Global Nuclear Order

In the current and only global nuclear order, deterrence is indeed king --albeit a quietly spoken one-- among the four core elements. But interaction between all four elements is crucial, so as to enable a *condition* of order, defined here as strategic stability, within nuclear order. More than that, it is the interaction between these elements that confers legitimacy to state actors within nuclear order and addresses the moral dilemma of potential annihilation that nuclear weapons have brought upon mankind since 1945. In addition, it is on the basis of these elements --deterrence, arms control, non-proliferation and disarmament-- that cooperation and regulation is built, so that affairs can be conducted according to an agreed set of principles and rules, thereby embedding a sense of responsibility and ownership, so that all states, nuclear and non-nuclear alike, have a stake in the direction of nuclear order.

In this regard, nuclear deterrence, arms control and non-proliferation preserve strategic stability and the status quo of a nuclear armed world. However, disarmament is a double-edged sword. On the one hand, it underpins strategic stability by affording nuclear order legitimacy, a legitimacy that is based not just on Article VI of the NPT but on the anti-nuclear protest movements that exist worldwide, as well as examples of states that have decided to forgo or roll-back nuclear weapons programmes. Yet, on the other hand, disarmament threatens to destabilise nuclear order since it is driven by the transformational imperative of a non-nuclear order.

Thus, certain elements of this nuclear order are in tension with others. While nuclear deterrence and arms control complement each other, serious tension exists between deterrence and disarmament. Unlike arms control, disarmament, in its ultimate formulation, works to dismantle nuclear weapons and therefore nuclear deterrence. Similarly, where nuclear arsenals are operational and deployed, deterrence may undermine disarmament

goals. Further, of the two elements, nuclear deterrence is far more deeply embedded into the fabric of nuclear order. Disarmament thus faces an as yet unresolved dilemma: how to replace deterrence in a bid to realise its ultimate goal--a non-nuclear order. A second dilemma for nuclear order is the interaction of non-proliferation with deterrence and disarmament. This thesis rejects the view that non-proliferation, as it stands today, is an anti-deterrence and pro-disarmament policy. Instead, it rests uneasily between both elements of deterrence and disarmament. This might change in the future, but, in its current form, the NPT regime seeks to freeze, not transform, the nuclear status quo. Such a goal preserves deterrence. For instance, extended nuclear deterrence supports non-proliferation by reassuring states they do not need to develop nuclear arsenals, and non-proliferation (in particular counter-proliferation) strengthens the deterrent value of nuclear weapons, contra disarmament goals, by bolstering their significance.

In sum, the first part of this chapter has demonstrated that nuclear order consists of four core elements: nuclear deterrence, arms control, non-proliferation and disarmament. These elements share a common goal --strategic stability-- though the strategies to attain that goal might conflict. Historically, nuclear order has undergone three periods of evolution: creation (1945-1970s), consolidation (1980s-1990s) and uncertain decline (2000-present). Structurally, nuclear order is created and maintained by states, in particular nuclear armed states; although non-nuclear weapons states and non-state actors have also played a role. Lastly, within nuclear order there is a *condition* and *pattern* of order, and nuclear order is but one of several *orders* within *the* global order.

Understanding Engagement

So far a definition and model of nuclear order has been offered, but how can the model be used to study nuclear weapons behaviour? Here, nuclear weapons behaviour is defined in terms of a state's engagement with the creation, consolidation and maintenance of nuclear

order. By engagement, I mean both positive and negative actions that can either help or hinder the process of creating, consolidating and maintaining nuclear order. Assessment of engagement will be broken-down into three areas: the methods employed by a state to engage; the motivations behind engagement; and finally, what that engagement means for nuclear order. By focusing on these three areas one can appreciate the level, nature and impact of engagement on nuclear order.

Methods and Impact of Engagement

There are four main methods through which a state engages with nuclear order. The first method relates to engagement that is either direct or indirect. Direct forms of engagement refer to behaviour that actively reinforces nuclear order, for instance China's decision to join the CTBT in 1996, or that which damages order, such as the North Korean decision in 2003 to withdraw from the NPT. Indirect forms of engagement refer instead to state behaviour which passively influences nuclear order, for instance behaviour that motivates other states (rather than the state in question) to shape nuclear order. An example of indirect engagement is China's decision to develop nuclear weapons. Second, engagement can be categorized according to its normative, organizational or strategic nature. There are forums, such as the CD, in which to declare support for norms, and these declarations may reinforce order. Organizational forms of engagement refer to treaties like the CTBT, which a state can join and promote. Strategic behaviour may be determined by domestic legislation restricting the export of dual-use and sensitive technology, or the direction of nuclear force modernization, if such a programme is underway. Third, states can engage at a unilateral, bilateral or multilateral level with nuclear order. A state may engage unilaterally through declared policies; or, bilaterally, by offering security assurances or indeed threats to other states. Multilateral forms of engagement can be regional, such as the Six Party Talks, or international, at forums like the NPT Review

Conferences. Fourth, the pace of engagement might vary. States can be slow in signing and ratifying treaties. Extending work by Kent, there are various stages to engagement: from joining, implementation, enforcement, and promotion.[125]

The methods described above influence nuclear order in various ways. In the literature, one approach is to consider China's international behaviour in terms of whether it is 'status quo' or 'revisionist' in orientation.[126] Elsewhere, Randall Schweller assigns three roles for emerging powers in global order: as 'spoilers, supporters or shirkers'.[127] Here, a more simple approach is taken. While some types of behaviour are meant to strengthen nuclear order, others destroy and weaken that order. Both direct and indirect forms of engagement have positive (stabilising) and negative (destabilising) elements that can help or undermine the process of creating, consolidating and maintaining nuclear order. For instance, engagement can be positive, such as China and the US ratifying the CTBT, or negative and destructive of nuclear order, from self-imposed marginalisation and criticism of nuclear order (India), to violating laws within nuclear order (North Korea and Iran). In reality, an actor can simultaneously adopt positive and negative forms of engagement, or adopt different forms in different historical eras. In addition, the significance may vary, from the unexpected success of negotiations in Libya which led to its decision to denuclearise, or of somewhat lesser impact, a nuclear weapons free zone in the Caribbean.

Motivations behind engagement

Methods and strategies tell us something about the level and nature or engagement, as well as what that behaviour means for nuclear order itself. But, what about the

[125]Kent, *Beyond Compliance*, p.26.
[126] Alastair Iain Johnston, 'Is China a Status Quo Power?', *International Security*, Vol. 27, No. 4, Spring 2003, pp. 5-56.
[127] Randall Schweller 'Emerging powers in an age of disorder', *Global Governance*, Vol. 17, 2011, pp. 285-297.

motivations that drive state engagement with nuclear order? A range of interconnected domestic and external variables can help us to understand why an actor might engage with nuclear order.

Financial and technological incentives represent the first variable that I treat as domestic. On the one hand, this incentive has been used to justify proliferation by countries such as Iran, citing financial, technological and scientific gains from nuclear trade, a peaceful environment for economic growth, and energy security.[128] On the other hand, economic considerations might constrain nuclear behaviour. Medeiros has highlighted how economic development is a long-term priority driving Chinese international behaviour.[129] Following this logic, Beijing has avoided behaviour that might threaten this goal, for instance its decision to stop nuclear testing in 1996. Equally, economic considerations might encourage engagement. China's decision to join the NPT in 1992 arguably helped improve its image following the Tiananmen protests in 1989, as well as secure Most Favoured Nation trading status from the US, and aid from Japan[130] and France. [131] Neoliberal institutionalist accounts also factor in economic inter-dependence in nuclear decision-making. Solingen, for instance, prizes the role of global economic integration in determining whether a state is likely to develop nuclear weapons. For Solingen, Japan has remained non-nuclear largely because of its integration in the global economy rather than the strategic guarantee provided by the US.[132]

[128]Sokolski, 'Towards an NPT-restrained world that makes economic sense', pp. 534-535.
[129]Evan Medeiros, *China's International Behavior:activism, opportunism and diversification* (Santa Monica, CA: RAND, 2009).
[130]Banning Garrett and Bonnie Glaser, 'Chinese Perspectives on Nuclear Arms Control', *International Security*, Vol. 20, No. 3, 1995/96, pp.43-50.
[131]Zachary S. Davis, 'China's Nonproliferation and Export Control Policies: Boom or Bust for the NPT Regime?' *Asian Survey*, Vol. 35, No. 6, 1995, pp. 592-593.
[132] Etel Solingen, *Nuclear Logics, contrasting paths in East Asia and the Middle East* (Princeton: Princeton University Press, 2007), pp. 57-81.

Second, engagement might be motivated by state actors including civil society, as well as non-state actors (such as terrorists, insurgents and private companies). Constructivist analysis highlights epistemic communities within and across states, such as arms controllers, in the nuclear decision-making process and the emergence of treaties such as the ABM.[133] In the US, there is a long-standing influential community dedicated to matters nuclear. This is unlike China, where the reach of sub-state actors over nuclear decisions is less clear. The development of an epistemic community in China since the 1980s has been a slow process.[134] Today this community includes arms control researchers, for example Li Bin at Tsinghua University; scientists and entrepreneurs within the export, defence and nuclear industries; members of China's Arms Control Department within the Ministry of Foreign Affairs; as well as military figures within the PLA, notably the Second Artillery, the General Staff Department, the Academy of Military Sciences, and National Defense University.[135]

The third variable, with both domestic and external implications, is related to image and normative sources of national power, namely status or prestige (terms I use interchangeably). For O'Neill, prestige is a social construction. It exists when three conditions are satisfied: when other states believe that the state in question has that quality; when the quality is deemed desirable; and when as a result of the above, the state in question holds power in the group. [136] In other words, prestige is sought so as to increase national power in international affairs. Yong Deng and Evan Medeiros respectively

[133]Emanuel Adler, 'The emergence of cooperation: national epistemic communities and the international evolution of the idea of nuclear arms control', *International Organization*, Vol. 46, No. 1, 1992, pp. 101-145.
[134]Medeiros, *Reluctant Restraint*, chapter five.
[135]Evan Medeiros, *Individuals, Institutions, and Policies in the Chinese Non-proliferation and Arms Control Community*, Center for Nonproliferation Studies (CNS), Monterey, California, 1997, http://cns.miis.edu/archive/cns/programs/eanp/research/1197conf.htm [accessed 20 January 2010]
[136]Barry O'Neill, 'Nuclear weapons and national prestige', Cowles Foundation Paper No. 1560, February 2006, pp. 8-9.

highlight how maximizing status has consistently been a major goal driving China's international behaviour.[137]

Prestige can account for various types of nuclear behaviour, including the decision to develop nuclear weapons. First, for past and current great powers, Quester has stated that 'nuclear weapons capabilities are simply regarded as a trapping of national grandeur'.[138] Likewise, for Bull, 'not all nuclear powers are great powers, but any great power must be a nuclear power'.[139] In this light, nuclear possession is a prerequisite for superpower or major power status. Alternatively, for countries that want to secure their international standing, such as the UK, France and China, a rich history of great power status might afford a sense of entitlement to nuclear weapons. Second, nuclear weapons might add leverage in negotiations with other states over issues that carry the potential for war, such as territorial and border disputes. In these cases, as Bull suggests, nuclear forces provide a 'new source of strength to [*a*] diplomatic position', adding to the domestic political capabilities of states.[140]

Third, nuclear weapons might offer status and prestige where there is little available to a particular state. They can also compensate, as Lavoy argues, for 'some weakness in national character or performance'.[141] This might be a sense of under-development, isolation, or of being over-taken in status. It is related to improving one's

[137]Medeiros, *China's International Behaviour*, pp. 17-18; and Yong Deng, *China's Struggle for Status: the realignment of international relations* (Cambridge: Cambridge University Press, 2008), pp.4-17.
[138]George Quester, 'Conceptions of Nuclear Threshold Status', in Regina Cowen Karp, ed., *Security With Nuclear Weapons?* (Oxford: Oxford University Press, 1991), p.217.
[139]Thanks to Dr. Ayson for sharing this quote in Hedley Bull 'Strategy and the Atlantic Alliance', Princeton University, 1964.
[140]Hedley Bull, 'The new balance of power in Asia and the Pacific', *Foreign Affairs*, Vol. 49, No.4, 1971, p.673.
[141]Peter Lavoy, 'Nuclear myths and the causes of nuclear proliferation', *Security Studies*, Vol. 2, No.3, 1993, pp. 192-212.

image and reputation.[142] For instance, according to O'Neill, testing displays technical prowess and the 'modernity that entitles nations to full-fledged membership in the world system'.[143] Similarly, for Walsh, Australia's nuclear ambitions in the 1960s were in part driven by a desire to stand equal with the United States and Britain.[144] Conversely, as Lavoy points out, weaknesses in the character or performance of a state might be compensated by *not* developing nuclear weapons (or rolling back nuclear programmes). Examples might include South Africa and Libya. Overall, the extent to which this variable influences behaviour seems to depend on the perceived level of contentment of a state in terms of its status, as well as the nature of the status sought.[145]

Historical experience represents the fourth domestic variable likely to influence the willingness of actors to engage or not with nuclear order. In this vein, the experience of the Second World War and occupation by Germany might have played a role in the French decision to develop nuclear weapons, so that experience might never be repeated.[146] Similarly, Germany's history in Europe as a war aggressor and the US atomic bombing of Japan in 1945 might explain why neither Berlin nor Tokyo have sought to develop nuclear weapons. In relation to China, Medeiros refers to three historical lenses that inform its international behaviour: the urge to reclaim past glory as a great civilization; to overcome victimization at the hands of foreign powers; and to defend hard-won sovereignty.[147]

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[142]For Alastair Iain Johnston, image is an end in itself, whereas reputation is instrumental, see his book *Social States: China in international institutions 1980-2000* (Princeton: Princeton University Press, 2008) pp. 74-99.

[143]O'Neill, 'Nuclear weapons and national prestige', p. 10.

[144] James Walsh, 'Surprise Down Under: The Secret History of Australia's Nuclear Ambitions', *The Nonproliferation Review*, Vol. 5, No. 1, 1997, pp. 1-20.

[145]In identifying the circumstances under which different nuclear decisions confer prestige, Solingen's work on the political economy of restraint is insightful. States pursuing status that is liberal and out-ward looking are likely to see the prestige value of denuclearisation or deeper commitments to nuclear order, as they will care about the perception of others. See Etel Solingen, 'The political economy of nuclear restraint', *International Security*, Vol. 19, No. 2, 1994, pp. 126-169.

[146]Wilfred L. Kohl, *French Nuclear Diplomacy* (Princeton: Princeton University Press, 1971), pp. 30-31.

[147] Medeiros, *China's International Behaviour*, pp. 7-18.

Closely linked to historical experience, strategic culture offers another lens through which to view nuclear behaviour. This builds on work by Peter Katzenstein[148] on the culture of national security as well as work by Alastair Iain Johnston on Chinese strategic culture, which he defines as an 'ideational milieu that limits behavioural choices…to derive specific predictions about strategic choice'.[149] History, tradition and the strategic environment are key sources of strategic culture. Based on his study of ancient and Communist China, Johnston identifies two strategic cultures driving Chinese behaviour: the dominant 'Parabellum realpolitik' and 'Confucian-Mencian idealism'.[150]

External variables are also important in explaining motivations to engage with nuclear order. The first of these relates to foreign pressure and incentives in pushing an actor to participate. Reiss also points to domestic and foreign pressure inducing nuclear restraint.[151] Pressure may come from one major actor (typically the US) or a collective of actors (via the UN). Medeiros' *Reluctant Restraint* demonstrates how after the 1980s the US applied pressure on the Chinese to participate in the non-proliferation regime, develop export controls and abandon its nuclear trade with countries like Algeria and Pakistan.[152]

A second external variable is related to treaty and institutional constraints that may lead to a 'locked-in' or 'slippery slope' phenomena, discussed by Kent in *Beyond Compliance* and Johnston in *Social States*. Participation breeds participation as state officials are socialized to believe in the benefits of nuclear order. Constructivists, for instance Tannenwald and Rublee, have gone further by highlighting the constraining effect

[148]Peter Katzenstein, *The Culture of National Security* (Columbia: Columbia University Press, 1996).
[149] Alastair Iain Johnston, 'Thinking about Strategic Culture', *International Security*, Vol. 19, No.4, 1995, p. 46.
[150] Alastair Iain Johnston, *Cultural realism: strategic culture and grand strategy in Chinese history* (Princeton: Princeton University Press, 1995), p. 25.
[151]Mitchell Reiss, *The Determinants of non-proliferation: why countries decide not to acquire nuclear weapons*, DPhil thesis, Oxford University, 1985, pp. 419-443.
[152]Medeiros, *Reluctant Restraint*, pp.17-19.

of international norms on the nuclear behaviour of states.[153] Kent finds that there existed 'initial instrumentalist drivers' for engagement, but once involved, pressures associated with participation pulled China further into the regime.[154] For Johnston, change in China's arms control position can be explained by socialization, which he defines as the internalization of roles and norms of group behaviour via three micro-processes: mimicking, social influence and persuasion. Mimicking is initial copying of group norms. Social influence refers to public conformity without private acceptance of norms. Persuasion involves public conformity and private acceptance of norms in the absence of material incentives or coercion. [155]

Third, change in threat perceptions, alliance politics and balances of power might force a state to re-assess whether engagement would enhance or constrain its security and military capabilities relative to other states. Goldstein has argued how China was motivated to develop nuclear weapons because of its disappointment with the benefits of the Sino-Soviet alliance and the ways in which it compromised China's political autonomy. [156] Alternatively, nuclear blackmail and the threat of nuclear attack might persuade actors to become nuclear weapons states.[157] Certain neorealist explanations as offered by Waltz and Mearsheimer emphasize this point; given that nuclear weapons exist in an anarchic international system in which security and self-help are paramount, proliferation is deemed highly likely. [158]

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[153]Tannenwald, *The Nuclear Taboo*; and Maria Rublee, *Nonproliferation Norms: Why States Choose Nuclear Restraint* (Athens: University of Georgia Press, 2009).
[154]Kent, *Beyond Compliance*, p. 102.
[155]Johnston, *Social States*, pp. 22-24, pp.46-47 and p. 212.
[156]Avery Goldstein, 'Understanding Nuclear Proliferation: China's Experience', *Security Studies*, Vol. 2, No. 3, 1993, p. 239.
[157] Though in the development phase, the state is arguably more insecure if it faces an increased threat of pre-emptive strikes.
[158]Kenneth Waltz, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Paper No. 171 (London: International Institute for Strategic Studies, 1981), and John Mearsheimer, 'Back to the Future: Instability in Europe after the Cold War', *International Security*, Vol. 15, No. 4, 1990, pp. 5-56.

State perceptions of nuclear order represent the last external variable. For some, engagement with the nuclear order might offer positive benefits to enhance security and image but for others, it is a discriminatory order best undermined. Indeed, for Paul, this explains why India rejected features of nuclear order such as the NPT.[159]

In summary, four methods of engagement have been proposed. Engagement can be direct, by actively contributing to nuclear order, or indirect by motivating others to shape nuclear order. In addition, it may be normative, organizational and/or strategic in nature, taking place at a unilateral, bilateral or multilateral level, and at a specific pace. The impact of these methods on nuclear order will vary, in terms of a positive (stabilising) or negative (destabilising) effect, significance and reach. In addition, an interconnected set of domestic and external variables provide reasons both for and against engagement with global nuclear order. Overall, this study seeks to determine which variables carry most analytical weight regarding China's engagement with the nuclear order. Understanding the motivations behind engagement will also shed light on the extent to which an action or policy was transformative or status quo orientated for nuclear order.

Conclusion

In conclusion, the task in this chapter was two-fold: define nuclear order and illustrate how the concept can be applied to the study of China's nuclear behaviour. Regarding the first task, the purpose of nuclear order has been identified as strategic stability, and its history has been divided into three stages: creation (1945-1970s), consolidation (1980s-1990s) and uncertain decline (2000s). Nuclear order has also been defined in terms of four core elements: nuclear deterrence, arms control, non-proliferation and disarmament. Within this model, deterrence is king, yet it faces challenges such as NMD and WMD use by terrorists. It is supported by arms control and non-proliferation,

[159]Paul, 'The systemic basis of India's challenge to the global nuclear order', pp. 1-11.

which also face obstacles, such as implementation. Crucially, these elements preserve the nuclear status quo. In contrast, disarmament provides legitimacy to the nuclear order but is ultimately geared towards the undoing of that order. Given this, interaction between all the elements, in particular deterrence and disarmament, is crucial in determining how well the *condition* of order within nuclear order is maintained, as well as its stability vis-à-vis wider orders and the overall global order.

As to the second task, the model developed in part one can be applied to study nuclear behaviour by focusing on China's engagement with the creation, consolidation and maintenance of nuclear order. Several methods of engagement have been proposed: that which is direct or indirect (in a positive or negative sense in terms of outcome for nuclear order); organizational, strategic or normative in nature; taking place at a unilateral, bilateral or multilateral level; and at a varying pace. In understanding the choice of methods, domestic variables such as financial incentives, sub-state interests, image, and historical experience are useful. So too are external variables related to foreign pressure, institutional constraints, security and changes in balances of power, as well as perceptions of nuclear order. Ultimately, this chapter has demonstrated that engagement with nuclear order is an innovative and holistic foundation on which to base analysis of nuclear behaviour. With this established, the thesis will now turn to a study of Maoist China's engagement with the creation of global nuclear order between 1949 and 1964.

Chapter Two
Maoist China and the advent of the nuclear age, 1949-64[1]

This chapter will evaluate Maoist China's engagement with the emerging global nuclear order before it became the world's fifth nuclear weapons state on 16 October 1964. Particular emphasis will be placed on how China participated, directly or indirectly,[2] in the creation of that order between 1949 and 1964. This approach will also shed light on how China was shaped by global nuclear developments during this period. An understanding of why China developed nuclear weapons will be important in this regard, as well as Chinese attitudes towards ideas of nuclear order as they emerged. The chapter is divided into two sections. The first section focuses on early discussions in China of nuclear weapons and nuclear strategy, China's decision to develop a nuclear weapons programme in the mid 1950s, and Chinese relations with the Soviet Union in the nuclear field until the late 1950s. The second section explores the early to mid 1960s following the Sino-Soviet split, the emergence of competing models for global nuclear order, as well as the superpowers' reactions to China's imminent nuclear status. At the end of each section, the influence of domestic and external variables outlined in the research framework will be assessed so as to understand the methods and motivations driving China's engagement.

Overall, this chapter will show that in its early pre-detonation period, Maoist China initially sided with Soviet positions on nuclear weapons issues, supporting in principle

[1] In addition to abundant secondary sources, this chapter is based on various primary and original language sources: memoirs of Chinese figures such as Nie Rongzhen; Chinese language documents from the archives of the Ministry of Foreign Affairs of the Peoples Republic of China (hereafter Chinese MFA); declassified documents from the *Digital National Security Archives* (DNSA) and *Foreign Relations of the United States* (FRUS); *Cold War International History Project* (CWIHP) material; reports in *Renmin Ribao (People's Daily)* and *Jiefangjun Bao (PLA Daily*) both via the Eastview database; the *BBC Summary of Broadcasts for the Far East* (SWB) and *Peking Review;* as well as documents from the University Services Center (USC). This chapter also benefited from documents from the L.B. Johnson Library (LBJ) and J.F. Kennedy Library (JFK) shared with the author by Lt. Commander Michele Poole of the US Naval Postgraduate School.

[2] As set out in chapter one, direct engagement refers to Chinese nuclear behaviour that actively contributes to nuclear order, whereas indirect engagement is passive, related to the perception of others regarding what needs to be done vis-à-vis nuclear order as a result of Chinese behaviour. Both types can have negative and positive consequences for nuclear order.

ideas that would eventually underpin nuclear order, such as disarmament. Later, in the early 1960s, China rejected a model for nuclear order promoted primarily by the US and USSR based on the non-proliferation of nuclear weapons. Instead, China offered an alternative model, labelled here 'socialist proliferation'. In the end, China came to passively rather than directly participate in the process of creating global nuclear order by influencing wider thinking on how that order should be constructed.

Nuclear Weapons are Paper Tigers[3]

The degree of rationality behind early Communist Chinese attitudes towards nuclear weapons is often the focus of western analyses. Mao Zedong's pronouncements in the mid to late 1940s disparaging nuclear weapons as unexceptional include well known statements such as 'the atom bomb is a paper tiger…it looks terrible but in fact is not…the outcome of war is decided by the people, not…weapons',[4] a statement that some have dismissed as irrational.[5] Many, including Moscow, considered Mao 'absurdly optimistic' on nuclear matters.[6] For others, China's ideas were based on an imperfect understanding of nuclear warfare.[7] And yet other scholars, like Ryan, describe initial attitudes as rational and sensible.[8] According to this latter view, China's disparagement of nuclear weapons came from a genuine belief that nuclear weapons were ineffective weapons of war.[9] Downplaying nuclear weapons also served a psychological rationale: to reduce fear within

[3]The Chinese term for paper tiger is *Zhihaolu* 纸老虎.
[4] Mao stated this in an interview with Anna Louise Strong in August 1946, see: 'Comrade Mao Tse-tung on "imperialism and all reactionaries are paper tigers"', *Peking Review*, Vol. 1, No.37, 11 November 1958.
[5] As noted in Mark Ryan, *Chinese attitudes towards nuclear weapons: China and the United States during the Korean War* (New York: Sharpe, 1989), p. 17.
[6] Stuart Schram quoted in Ryan, *Chinese attitudes towards nuclear weapons*, p.5, ft.5; and Schram, *The Political Thought of Mao Tse-tung* (New York: Praeger, 1969), pp. 129-130.
[7]See Hsieh's *Communist China's Strategy in the Nuclear Era* (Englewood Cliffs, New Jersey: Prentice-Hall, 1962), pp. 7-11.
[8] Ryan, *Chinese attitudes towards nuclear weapons*, pp. 3-21. See also Morton Halperin and Dwight Perkins, *Communist China and Arms Control* (Cambridge, Mass.: Harvard University Press), pp. 48-50.
[9] Ralph Powell,'Great powers and atomic bombs are 'paper tigers'', *The China Quarterly*, No. 23, 1965, pp. 55-63; and Zhang Shu Guang, 'Between "Paper" and "Real Tigers": Mao's View of Nuclear Weapons' in John Gaddis et al eds., *Cold War Statesmen Confront the Bomb, Nuclear Diplomacy since 1945* (Oxford: Oxford University Press, 1999), pp. 196-198.

the Chinese Communist Party (CCP) and People's Liberation Army (PLA), as well as the general population.[10] Moreover, perhaps the adoption of ambiguous rationality and ideological rhetoric compensated for the lack of an actual nuclear deterrent in China.[11]

Indeed, both ideological and pragmatic concerns drove early Communist Chinese attitudes on nuclear matters. Halperin writes about the Yan'an debates on the possible impact of nuclear weapons on CCP victory in the civil war and the worldwide socialist revolution.[12] Mao eventually won the debate contending that nuclear weapons did not alter the laws of history and decide the outcome of wars. The CCP leader acknowledged the destructiveness of these weapons but denied that nuclear threats would work against China.[13] Later, in preparation for the Korean War (1950-1953), the CCP conducted a study of the role such weapons might play in the fighting and concluded that these weapons would be largely ineffective against China based on the mainland's geography (large land mass, population, and dispersal of industry); the primitive technology behind nuclear weapons at that time (in terms of accuracy and reliability as effective battlefield weapons); and crucially, by 1949, the support of a nuclear-armed Communist ally, the USSR.[14] Essentially, nuclear weapons did not remove the prospect of conventional war, and China was thus undeterred in 1950 from entering into war with a nuclear-armed state.

However, despite downplaying the value of nuclear weapons in public statements, there is evidence of early Chinese interest in these weapons, as well as fear of the

[10] Henrietta Harrison, 'Popular Responses to the Atomic Bomb in China, 1945-1955', unpublished manuscript presented at the Transnational History in a Globalized World Conference, Oxford University, 9 September 2010, updated January 2012.
[11] John Baylis 'Chinese Defense Policy' in John Baylis, ed., *Contemporary Strategy Volume II* (London: Holmes and Meier, 1987), p. 136. The Soviet Union adopted a similar rationale in the 1940s, see George Quester, 'On the identification of real and pretended communist military doctrine', *Journal of Conflict Resolution*, Vol. 10, No.2, 1966, pp. 172-175.
[12] Discussed in Ryan, *Chinese Attitudes towards nuclear weapons*, pp.17-18, and ft. 10 and 11.
[13] Mao Zedong, 'The situation and our policy after the victory in the war of resistance against Japan', 13 August 1945, in *Selected Works of Mao Tse-tung* (Beijing: Foreign Languages Press, 1961), p. 21.
[14] On this study, see Zhang, 'Between "Paper" and "Real Tigers"', pp.197-98.

consequences of their actual use.[15] Harris contends that the CCP engaged in a 'systematic programme of collecting information' on atomic issues.[16] Second, China began preparations to survive a nuclear war via the adoption of civil defence measures, notably the construction of air raid shelters and tunnelling systems.[17] Third, in 1949, a CCP delegation in Moscow headed by Liu Shaoqi, supposedly requested --but was denied-- a tour of Soviet nuclear installations.[18] China also engaged in several nuclear weapons related efforts with the USSR, among these to extract and mine uranium discovered in Xinjiang in 1944.[19] On 14 February 1950, a thirty-year treaty of friendship, alliance and mutual assistance was signed between both countries.[20] The treaty did not refer to nuclear weapons but Chinese Premier and Foreign Minister Zhou Enlai insisted on the inclusion of a guarantee, however vague, that the USSR would 'render assistance [*to China*]…with all means at its disposal'.[21]

Chinese Nuclear Weapons Development

Chinese attitudes towards nuclear weapons changed dramatically in the early to mid 1950s. The experience of the Korean War highlighted Chinese military and technological weaknesses compared with the US. This situation was reinforced with US development of tactical nuclear weapons, the thermonuclear hydrogen weapon (1952) and

[15]This chapter is focused on Communist efforts, but Chiang Kai Shek was also interested in the nuclear bomb, see Tang Ren, 'Jiang jieshi ceng ling mimi yanzhi yuanzidan nanfang renwu zhoukan'[Jiang Kaishi Once Decided to Develop Atomic Bombs], *Southern People Weekly Magazine*, September 2007.
[16]William Harris, 'Chinese nuclear doctrine: decade prior to weapons development', *The China Quarterly*, No.21,1965,p.89. On CCP recruitment of Chinese scientists abroad in the 1950s, see Ryan, *Chinese attitudes towards nuclear weapons*, p. 20; and Iris Chang, *Thread of the Silkworm* (Oxford: Basic Books, 1995).
[17] Mark Ryan, 'Early Chinese attitudes towards civil defense against nuclear attack', *Australian Journal of Chinese Affairs*, Vol. 10, No.21, 1989, pp. 81-109.
[18] Viktor M. Gobarev, 'Soviet policy toward China: developing nuclear weapons 1949-1969', *The Journal of Slavic Military Studies*, Vol. 12, Issue 4, 1999 , pp. 1-53.
[19]Martin Zuberi, 'Soviet and American Technological Assistance and the Pace of Chinese Nuclear Tests', *Strategic Analysis*, Vol. XXIV, No.7, 2000, pp. 1247-1266.
[20]John Lewis and Xue Litai, *China Builds the Bomb* (Stanford: Stanford University Press, 1988), pp. 40-41.
[21] Gobarev, 'Soviet Policy Toward China', p.3.

fission-fusion-fission weapon (1954).[22] In addition, in the mid to late 1950s the US deployed tactical nuclear weapons to bases in South Korea, Taiwan, Guam and Hawaii.[23] For China, increased US military might, superior to that of its ally, the Soviet Union, translated into a credible and serious threat of sudden attack.[24] This was reinforced by US nuclear threats against China in May 1953 during the Korean War,[25] and during the Taiwan Straits crisis from 1954 to 1955.[26] China also had to contend with provocative changes in the international strategic environment, evident in US nuclear strategy with the Eisenhower administration's *Massive Retaliation* and *New Look* in the mid 1950s as well as missile and bomber arms races between the superpowers throughout the 1950s.[27] Beyond the US, UK and Russia, several countries were considering the nuclear weapons option, among these Sweden, France, Israel, India and West Germany.[28]

In response to these growing external pressures and security threats, in January 1955 Mao decided to initiate a nuclear weapons programme.[29] Expatriate and foreign

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[22] Lewis and Xue, *China Builds the Bomb*, pp. 12-16.

[23] Robert S. Norris, William N. Arkin and William Burr, 'Where They Were', *The Bulletin of the Atomic Scientists*, Vol. 55, No.6, 1999, p. 30. Most were nuclear-armed cruise missiles. Okinawa hosted strategic bombers and Japan allowed port calls of US nuclear armed ships. US nuclear weapons were also based on Chichi Jima and Iwo Jima, Iceland and Greenland.

[24] Harris, 'Chinese Nuclear Doctrine', pp. 87-85.

[25]See Marc Trachtenberg, 'A "Wasting Asset": American Strategy and the Shifting Nuclear Balance, 1949-1954', *International Security*, Vol. 13, No.3, 1988/89, pp. 5-49; Roger Dingman, 'Atomic Diplomacy during the Korean War', *International Security*, Vol. 13, No. 3, 1988/89, pp. 50-91; and Rosemary Foot, 'Nuclear Coercion and the Ending of the Korean Conflict', *International Security*, Vol. 13, No. 3, 1988/89, pp. 92-112. See also Carleton Savage, 'Questions to be considered regarding possible U.S. use of the atomic bomb to counter Chinese Communist aggression in Korea', Top Secret, 9 November 1950, Nuclear Non-Proliferation Collection, No. NP00070, via DNSA.

[26] Gordon Chang and He Di, 'The Absence of War in the U.S.-China Confrontation over Quemoy and Matsu in 1954-1955: Contingency, Luck or Deterrence?', *The American Historical Review*, Vol. 98, No.5, 1993, pp. 1500-1524; John Gittings, *The World and China, 1922-1972* (London: Eyre Methuen, 1974), p. 203; and Rosemary Foot, *The Practice of Power, U.S. Relations with China since 1949* (Oxford: Oxford University Press, 1995), pp.168-177.

[27] See Lawrence Freedman, *The Evolution of Nuclear Strategy*, 2nd edn. (London: Macmillan, 1989), pp. 76-90 and pp. 155-171; and Matthew Jones, 'Targeting China U.S. Nuclear Planning and "Massive Retaliation" in East Asia, 1953-1955', *Journal of Cold War Studies*, Vol. 10, No.4, 2008, pp. 37-65.

[28]US CIA Director, 'Development of Nuclear Capabilities by Fourth Countries', NIE 100-2-58, 1 July 1958, Weapons of Mass Destruction Collection, No.WM00027, via DNSA.

[29] Lewis and Xue, *China Builds the Bomb*, pp. 11-46 and pp. 168-74; and Liang Dongyuan, *Zhongguo di yi ke yuanzidan 596 mishi* [China's First Atomic Bomb: The Secret History of 596] (Wuhan: Hubei Renmin Chubanshe, 2000).

trained scientists were recalled to China, including Qian Xuesen, Qian Sanqiang and Wang Ganchang.[30] In 1955, the CCP Politburo appointed Chen Yun, Marshal Nie Rongzhen and Bo Yibo to manage the programme.[31] Civilian experts were moved into the military sector, and by June 1956, some 380 experts were transferred into China's strategic weapons programme. In April 1956, in 'On the Ten Major Relationships', Mao connected economic construction with defence construction, and investment was readjusted accordingly.[32]

Between 1955 and 1957, internal debates between the PLA General Staff and Ministry of National Defence (MND) discussed how to implement a defensive military posture.[33] Doctrinal debates on nuclear deterrence in the USSR fed into this debate, expanding awareness of deterrence in China.[34] Issues discussed included the effectiveness, cost and compatibility of a nuclear arsenal and the military/political role of the PLA. The General Staff sought to reduce vulnerability to first strike while the MND sought to prioritize the economy and the party above all else. Eventually, the MND approach won out over changes recommended by the General Staff. Nevertheless, cautious balancing of People's War and military modernization continued under the Minister of Defence, Lin Biao, with debates on defence in 1959, 1965 and 1971.[35] Eventually, in 1956, Mao initiated several nuclear related projects, among these the 'Two Missiles One Satellite'

[30]Evan Feigenbaum, 'Soldiers, weapons and Chinese development strategy: the Mao era military in China's economic and institutional debate', *The China Quarterly*, No. 158, 1999, pp.303-307.
[31] Yan Kong, 'China's Nuclear Bureaucracy', *Jane's Intelligence Review*, July 1993, pp.320-326.
[32] Feigenbaum, 'Soldiers, weapons and Chinese development strategy', p. 307.
[33] On these, see Ellis Joffe, *Party and army: professionalism and political control in the Chinese officer corps, 1949-1964* (Cambridge Mass.: Harvard University Press, 1965), p. 91; and Harry Harding, 'The Evolution of Chinese Military Policy' in Frank B. Horton III et al., eds., *Comparative Defense Policy* (Baltimore, London: Johns Hopkins University Press, 1974), pp. 216-232.
[34] Hsieh, *Communist China's Strategy in the Nuclear Era*, pp. 24-26.
[35]See Alice Hsieh, 'Communist China and Nuclear Warfare', *The China Quarterly*, No. 2, 1960, pp. 1-15 and Harding, 'The Evolution of Chinese Military Policy', p. 220.

（*liang dan yi xing* 两弹一星）also known as the 'Nuclear, Missile and Satellite Project' and by 1958, the official plan for nuclear weapons development was released. [36]

Soviet aid was critical to the development of China's nuclear weapons programme. Indeed, Marshal Nie Rongzhen, the father of China's nuclear weapons programme, admits that without Soviet assistance, it would not have been possible for China to make rapid progress in its nuclear endeavours.[37] Important accords with the USSR were signed in 1954, 1955 and 1957, aiding China's programme at key stages of the nuclear fuel cycle. This included surveys of Chinese uranium ores, as well as chemical separation for the production of weapons grade uranium (U-235) and plutonium.[38] On 29 April 1955, the Sino-Soviet Atomic Cooperation Treaty was signed, leading to the supply of an experimental reactor and cyclotron. In September 1956, the Soviet First Five Year Plan for Foreign Aid included the development of 39 atomic centres in China. Chinese students also received relevant training in the Soviet Union. On 20 July 1957, Moscow even invited a Chinese delegation to witness its ICBM tests. Crucially, on 15 October 1957, both countries signed the New Defence Technical Accord for aid in technologies such as rockets and aviation.[39]

There exists some debate as to whether the 1957 accord included a genuine intention to supply China with a blueprint for and/or a working prototype of an atomic

[36]For more, see *Renmin Ribao*, 'Xiang liang dan yi xing gongchen zhijing, shelun' [Editorial: Missiles plus one satellite, heroic tribute] 19 September 1999.Wang Suli, 'Liang dan yi xing de zhanlue juece yu lishi jingyan' [The strategic decision and historical experience of Atomic Bomb, Missile and Man-made Satellite] *Zhonggongdang shi yanjiu* [Journal of Chinese Communist Party History Studies] No. 4, April 2001, pp. 55-59.; and Song Jian, *Liang dan yi xing yuan shuai* [Marshals of the Nuclear Bomb, Missile and Satellite Project] (Beijing, Tsinghua Daxue Chubanshe, 2001).

[37]Nie Rongzhen, *Nie Rongzhen huiyilu junshi wen* [Nie Rongzhen Military Culture Memoirs] (Beijing: Jiefangjun Chubanshe, 1992), pp. 395-398; and Liu Yanqiong and Liu Jifeng, 'Analysis of Soviet technology and transfer in the development of China's nuclear weapons', *Comparative Technology Transfer and Society*, Vol. 7, No. 1, 2009, pp. 66-110.

[38] Minor, 'China's nuclear development program', p.571.

[39] 'New Stage in China's Atomic Science', *Peking Review*, No. 31, 30 September 1958, p.7.

bomb, as well as missiles and technical data.[40] According to Zuberi, the prototype was assembled and packed for Beijing, but never sent.[41] Hinton contends that Mao requested a device but the price for such a device --joint military control-- was too high, so Mao refused.[42] For Garthoff, the Soviets never planned to give a complete nuclear weapon to China but decided it would be better to be involved so as to monitor developments. [43] The USSR thus provided aid at a deliberate pace 'hoping to postpone the attainment of a native Chinese nuclear weapons capability'.[44] Whatever the intentions, Soviet aid was crucial since China did not initially have the infrastructure and expertise in place to support a nuclear programme of its own.

Beyond technical aid, Soviet influence extended to Chinese positions on arms control and disarmament, with China officially allied to the USSR on these issues in the 1950s.[45] Initially, in 1950, the Chinese government heavily promoted the *Stockholm Appeal*, a French initiated and Soviet sanctioned petition to ban nuclear weapons worldwide.[46] Then, on 19 November 1951, China supported a Soviet peace proposal to the UN General Assembly. Later, at the Geneva Indo-China conference in 1954, Zhou Enlai further reinforced China's support for disarmament and arms control, stating: 'the arms race must be halted, universal disarmament be carried out and atomic and hydrogen

[40] Hsieh, *Communist China's Strategy in the Nuclear Era*, pp. 15-75.
[41] Zuberi,'Soviet and American Technological Assistance', p.1250. According to Lewis and Xue, Chinese workers repeatedly went to a railway station to collect a prototype that never arrived, see *China Builds the Bomb*, pp. 60-61.
[42] Harold Hinton, 'The Chinese Attitude', in Morton Halperin, ed., *Sino-Soviet Relationship and Arms Control* (Cambridge Mass.,: MIT Press, 1967), pp. 171-192.
[43] Raymond Garthoff, 'Sino-Soviet Military Relations', *The Annals of the American Academy of Political and Social Science*, No. 349, 1963, pp. 81-90.
[44] US National Intelligence Estimate (NIE) 13-2-60, 'The Chinese Communist Atomic Energy Programme', 13 December 1960, in Tracking the Dragon: National Intelligence Estimates on China during the Era of Mao, 1948-1976, http://www.dni.gov/nic/foia_china_content.html [accessed 14 April 2009]
[45] Hungdah Chiu, 'Communist China's attitude towards nuclear tests', *The China Quarterly*, No.21, 1965, pp. 96-107.
[46] Harrison, 'Popular responses to atomic bomb in China', pp. 6-7.

weapons and weapons of mass destruction be prohibited'.[47] Even as it developed its own nuclear programme, Beijing supported Soviet disarmament proposals between 1955 and 1957 and publicly agreed with Soviet positions on test bans and nuclear weapons free zones.[48] Indeed, more generally, China's Foreign Ministry called for nuclear free zones in 1958, 1959 and 1960.[49] In 1959, at a meeting of the Standing Committee of the National People's Congress, Chinese Foreign Minister Chen Yi explained that 'the initiatives suggested by the Soviet government on arms control are fully in accord with the fundamental interests of the Chinese people'.[50]

Global Nuclear Developments (1949-59)

It is important to place China's decision to develop nuclear weapons and to align itself with the USSR in the context of wider nuclear developments in the late 1940s and 1950s. This was a period of extreme unease, in which global nuclear order had yet to emerge. The prospect of nuclear war and surprise attack were deemed to be very high, spawning various world-wide anti-nuclear protest movements in the US, Europe and Asia. Both superpowers were engaged in a fierce arms race, increasing their nuclear capabilities both quantitatively and qualitatively in a bid to cancel out the deterrent effect of their nuclear arsenals over one another. The US had also threatened to use nuclear weapons in

[47]Quoted in Wu Yun, 'China's policies towards arms control and disarmament', *Pacific Review*, Vol. 9, No. 4, 1996, p. 578.

[48] Chiu, 'Communist China's attitude towards nuclear tests', pp. 98-100. See also 'Zhu Sulian shiguan guanyu Sulian waizhang Geluomike tan tingzhi hewuqi shiyan wenti de dianwen' [Chinese Embassy in Soviet Union, Soviet Foreign Minister Gromyko talks about the prohibition of nuclear testing], File No.109-0181302, 28 October 1958; 'Sulian lingdao ren he guanyuan tan caijun, ta nenggou zhi he shiyan ji guoji xingshi' [Soviet Union leadership and officials discuss disarmament, the prohibition of nuclear testing and international situation], File No. 109-01930-01, 18 February 1959; and 'Zhongguo zhengfu zhichi Sulian zhengful jueding jinxing hewuqi shiyan xing baozha yi hanwei shijie heping de shengming ji youguan tanhua jilu, zhaohui, wenjian' [China's government continues to support Soviet Union's decision to test nuclear weapons, records of meetings and statements], File No. 109-02245-01, 31 August 1961, all Chinese MFA.

[49] Walter Clemens Jr., 'China' in Richard Burns, ed., *Encyclopaedia of Arms Control and Disarmament*, Vol.1 (New York: Charles Scribner's Sons, 1993), p.65 and Kuo Mo-Jo, 'Asia without nuclear weapons', *Peking Review*, 15 April 1958, pp.8-9.

[50] Zhu Mingquan, 'The Evolution of China's Nuclear Nonproliferation Policy', *The Nonproliferation Review*, Vol. 4, No. 2, 1997, p.40. In 1963, Chen Yi stated China 'would not be bound by any international disarmament agreement which was reached without China's formal participation and which was not signed by China', 23 January 1960, *NCNA*, via SWB.

various crises in Europe and in Asia, such as Indochina in 1954 and over Taiwan in 1955 and 1958. Nevertheless, early stepping stones in the creation of a nuclear order are discernible. The earliest of these is a focus on disarmament, with the UN Disarmament Commission established in 1952.[51] Another effort focused on bringing atomic energy under international control.[52] The Atoms for Peace, launched in 1953 by US President Eisenhower, was an important effort in this regard.[53]

Beyond efforts to disarm and control nuclear technology, another important development was underway: the superpowers were focusing on deterrence so as to manage their nuclear relationship. In fact, the superpowers were actively building up their nuclear arsenals at this time, guided perhaps by a sense that nuclear weapons, if managed properly, would not make war more likely, but less.[54] Arms control and non-proliferation were important in this regard. In 1958, the Geneva conference focused on nuclear testing, a 'Surprise Attack' conference took place and a draft proposal was presented by Ireland to the UN General Assembly for an agreement to curb the spread of nuclear weapons. This draft would later form the basis of the Non-Proliferation Treaty (NPT).[55]

It is in the context of these global nuclear developments, as well as the Korean War, exposure to US weapons advancements, and nuclear threats, that China embarked upon a nuclear programme with Soviet aid. According to Nie Rongzhen, 'to get rid of imperialist bullying, which China had suffered for more than a century, we had to develop these sophisticated [*nuclear*] weapons. At least then, we could effectively counterattack if China

[51] David Holloway, 'Nuclear Weapons and the escalation of the Cold War, 1945-1962', in Melvyn Leffler and Odd Arne Westad, eds., *The Cambridge History of the Cold War* (Cambridge: University of Cambridge Press, 2009), pp. 376-397.
[52] Mohamed Shaker, *The Nuclear Non-Proliferation Treaty: Origin and Implementation, 1959-1979*, Vols. I-III (London: Oceana Publications, 1980), pp. 3-20 and pp. 344-345.
[53] J. Pilat et al., eds., *Atoms for Peace: An Analysis after Thirty Years* (Boulder: Westview Press, 1985).
[54] Security Resources Panel of the Science Advisory Committee, 'Deterrence and Survival in the Nuclear Age', 7 November 1957, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB139/nitze02.pdf [accessed 20 April 2010]
[55] Shaker, *The Nuclear Non-Proliferation Treaty*, pp. 3-26.

were subject to imperialist nuclear attack'.[56] Beyond changing security perceptions, domestic considerations related to prestige also explain why China sought a nuclear deterrent.[57] In 1958, Mao contended that without nuclear weapons 'others don't think what we say carries weight'.[58] This was all the more important given that with the use of nuclear blackmail and a strict containment policy, the US was undermining China's prestige on the international stage during the 1950s, denying the regime 'full status in the international community'.[59] Barnett adds that China was the only major power at the time 'excluded from the most important international councils'.[60] Indeed, the US denied the PRC a permanent seat on the UN Security Council, allowing the ROC to retain the seat initially awarded in 1945. Halperin contends that nuclear weapons promised the PRC greater status and influence, not only globally but also regionally and within the Communist bloc.[61]

In assessing the impact of Chinese nuclear behaviour on global nuclear developments, China's decision to develop nuclear weapons and support Soviet positions on disarmament could be considered to have increased pressure on the superpowers to manage the nuclear and conventional arms race. China's decision to ally with the USSR can also be said to have influenced ideas related to nuclear order by underlining Chinese support in principle for the idea of disarmament. However, China's support of Soviet positions was perhaps only symbolic since the initiatives it proposed or supported never materialised. China was not a member of the UN and had no part in the Atoms for Peace or

[56] Nie Rongzhen, 'How China develops its nuclear weapons', *Beijing Review*, 29 April 1985, p. 17.
[57] John Gittings, 'New light on Mao 1. His View of the World', *The China Quarterly*, No. 60, 1974, pp. 750-766; and Michael Yahuda, 'China's Nuclear Option', *The Bulletin of Atomic Scientists*, Vol. 25, No.2, 1969, pp. 73-77.
[58] Quoted in Lewis and Xue, *China Builds the Bomb*, p. 36.
[59] See Foot, *The Practice of Power*, p. 23, p. 212.p. 260; and Evelyn Goh, *Constructing the U.S. Rapprochement with China, 1961-1974: From "Red Menace" to "Tacit Ally"* (New York: Cambridge University Press, 2005).
[60] A. Doak Barnett, 'The inclusion of Communist China in an arms control program', *Daedalus*, Fall 1960, p. 837.
[61] Morton Halperin, 'China's Strategic outlook', in Alastair Buchan, ed., *China and the Peace of Asia* (London: Chatto and Windus, 1965), p. 104.

the IAEA.[62] Furthermore, major discrepancy existed between China and the superpowers with regards to nuclear war. As David Holloway argues, 'by the mid 1950s, the political leaders of each of the nuclear states understood that nuclear war was unacceptable'[63] but China, with its paper tiger thesis seemingly undermined this. Indeed, despite China's public disparagement of nuclear weapons and support of Soviet proposals, it was after all seeking to develop a nuclear arsenal. In sum, the prospect of a nuclear China was likely to upset the global balance of nuclear forces.

Isolation and Self-Reliance (1958-64)

In the early 1960s, China remained intent upon developing nuclear weapons, reinforced by further US nuclear threats, in particular during the 1958 Sino-US crisis over the offshore islands, Quemoy and Matsu (Jinmen and Mazu).[64] Chang contends Eisenhower was prepared to use nuclear weapons against China over this incident.[65] Hsieh points to other threatening US activities: a US-Japanese security treaty in 1960, anti-aircraft missiles stationed in Taiwan and Japan, the proposed build-up of Polaris submarines in the US Pacific fleet, and the reported presence of B-52s and US jet fighter planes in the region.[66]

In addition, differences between China and the USSR had been deepening since the late 1950s.[67] China contended that wars of national liberation could remain non-nuclear, allowing China to help in these wars even if the west intervened. The USSR considered

[62] China also considered the Geneva conference phoney, intent upon preventing new states from developing nuclear weapons. See *SWB*, 'The Geneva Disarmament Conference', *NCNA*, 18 March 1960, No. 287.
[63] Holloway, 'Nuclear Weapons and the escalation of the Cold War, p. 384.
[64] *Peking Review*, 'Statement of Foreign Minister Chen Yi refuting Dulles' speech at UN', No. 30, 23 September 1958.
[65] Gordon Chang, 'To the nuclear brink: Eisenhower, Dulles and the Quemoy-Matsu Crisis', *International Security*, Vol. 12, No.4, 1988, pp. 96-123; and Desmond Ball and Jeffrey Richelson, *Strategic Nuclear Targeting* (Ithaca: Cornell University Press, 1986), p.76.
[66] Alice Hsieh, 'Communist China and nuclear force', *RAND*, P-2719-1, 1963, p.17; *Peking Review*, 'Firing of U.S. guided missiles over Chinese mainland condemned', Vol. 32, 7 October 1958, p.12; and *Jiefangjun Bao*, 'Meiguo jueding kuoda dixia he shiyan jihua' [The expansion of US underground nuclear testing] 26 August 1963.
[67] Lewis and Xue, *China Builds the Bomb*, pp. 192-193.

this position irresponsible and aggressive.[68] The Soviet Union was thus unwilling to support China's attack on Quemoy and Matsu in 1958, seeing it as too dangerous in a nuclear world. Further, as Lambeth argues, China's attack likely pushed the Soviets further towards a Partial Test Ban Treaty (PTBT).[69] The Soviets also considered Chinese actions detrimental to the promotion of détente with the US. On 20 June 1959, Khrushchev abrogated the 1957 treaty with Beijing declaring that no prototype would be provided because of Moscow's commitment to a PTBT.[70] By August 1960, the USSR withdrew all its advisers, almost 3000 in total, from China.

Facing international isolation and various nuclear threats to its security, Beijing perceived an urgent need for it to secure a nuclear deterrent. With the loss of Soviet aid, self-reliance had come earlier than planned, placing strains on the national budget. In addition, this was complicated by domestic debates on nuclear issues between the PLA and civilian actors, especially those concerned with China's economic development.[71] Despite this debate, a consensus was forged. Feigenbaum points to Nie Rongzhen as crucial in developing a 'techno-national development' strategy which redefined the programme beyond weapons to technology of broader significance.[72] Similarly, Zhou Enlai aided this effort by setting up a Special Commission to prioritise nuclear activities in 1962.[73] According to the 'techno-national development strategy' the military programme would feed into national industrialization efforts. This new strategy worked: the programme

[68] Alice Hsieh, 'China's Secret Military Papers: military doctrine and strategy', *The China Quarterly*, No. 18, 1964, pp. 79-99; and Morton Halperin, *China and the Bomb* (London: Pall Mall, 1965), p. 27.
[69]Benjamin S. Lambeth, 'Nuclear Proliferation and Soviet Arms Control Policy', *Orbis*, Vol. XIV, No.2, 1970, pp. 300-311.
[70] Hsieh, *Communist China's Strategy in the Nuclear Era*, p. 111, and Dai Chao-Wu, 'Zhongguo hewuqi de fazhan yu zhongsu guanxi de yanlie 1954--1962' [The Development of China's Nuclear Weapons and the Rupture of Sino-Soviet Relations (1954—1962)] *Dangdai Zhongguo shiyanjiu* [*Contemporary China History Studies*], Vol. 8, No. 3, May 2001, pp. 76-85.
[71] Feigenbaum, 'Soldiers, weapons and Chinese development strategy', pp. 285-313.
[72] Ibid, p. 294.
[73] Lewis and Xue, 'Strategic weapons and Chinese power: the formative years', *The China Quarterly*, No. 112, 1987, p. 544.

continued throughout the Great Leap Forward (1958-60), nuclear reactors were set up in Xian and Chongqing to produce weapons grade plutonium, and a team was transferred to Xinjiang to focus on delivery systems. By 1963, the Lanzhou gaseous diffusion plant could produce enough U-235 for a 20 kilo tonne nuclear bomb.[74]

Competing Visions of a Global Nuclear Order

With China now independently pursuing nuclear weapons development, in the early to mid 1960s significant changes were underway in its views on arms control, proliferation and disarmament. These views evolved in response to what China considered a nuclear monopoly promoted by the US and USSR,[75] and attempts by the superpowers to prevent the proliferation of nuclear weapons. This section will consider these developments in terms of two competing potential blueprints for nuclear order: one promoted by the superpowers based on arms control and non-proliferation, and an alternative model offered by Maoist China.

Superpower model for nuclear order

Nuclear monopoly evolved as a potential model on which to base global nuclear order following the failure of disarmament initiatives.[76] As Holloway highlights, the 'negotiations on general and complete disarmament in the 1940s and 1950s had achieved nothing'.[77] In addition, attempts to bring nuclear technology under international control such as through the Atoms for Peace had failed.[78] The nuclear monopoly model intended to reinforce power dynamics and stabilize superpower relations by defining their role in

[74] Robert Guillain, 'Test years of secrecy', *Bulletin of the Atomic Scientists*, Vol. 21, No. 2, 1965, p. 24.
[75] The idea of a superpower monopoly during the Cold War, when the US and USSR were enemies, seems somewhat incongruous. However, from the Chinese perspective, the superpowers were colluding together on nuclear matters. The term nuclear monopoly (*he long duan* 核垄断） was used extensively in news reports and Foreign Ministry documents of that period.
[76] Though unsuccessful, an 18-Nation Disarmament Committee (ENDC) was launched in 1961 and the McCloy-Zorin accords on disarmament took place between September and December 1961.
[77] David Holloway, 'The United States and the NPT "Double Bargain"', paper presented at Nobel symposium, 2009, p.12.
[78] See Francis J. Gavin, 'Blasts from the Past: Proliferation Lessons from the 1960s', *International Security*, Vol. 29, N. 3, Winter 2004/05, p.102.

the structure of deterrence, focusing on non-proliferation agreements like the 1963 PTBT and NPT, created in 1968 but for which the USSR publicly declared its support as early as 25 August 1962.[79]

The model was heavily based on a heightened fear of nuclear proliferation, and a lack of faith that new nuclear powers would be responsible bearers of a nuclear arsenal.[80] Underlying this focus on proliferation was a fear that the spread of nuclear arms would likely dilute or reduce the relative power position of the superpowers, hence the shared interest between the two countries in maintaining an exclusive nuclear club. The superpowers were particularly concerned about the prospects of a nuclear armed Germany, leading to the idea of a Multilateral Nuclear Force (MLF) during the Eisenhower and Kennedy administrations.[81] China's nuclearisation was also a grave concern: on the one hand it was expected to incite interest in developing nuclear weapons in India and Japan;[82] on the other hand, its actions in 1958 over Quemoy and Matsu seemed to display a blatant disregard for the threat of nuclear war, and as previously highlighted, pushed the USSR further towards the idea of a PTBT. US analysis suggests that the PTBT was a deliberate measure to halt or delay Chinese nuclear weapons development.[83] A leading US arms control negotiator at that time, Gerard Smith, also called for a fissile materials production cut-off accord with the USSR so as to preserve strategic advantage and check Chinese

[79] The superpowers built upon past efforts such as Irish UN resolutions and UN General Assembly resolution 2028 in 1965. On the Chinese response to the Soviet Union's public support of the NPT, see, 'Waijiao bu jiu bu hekuosan hewuqi wenti xiang zhu wai shiguan fachu de tongbao he zhi Sulian de beiwanglu' [Notice and memo circulated to Chinese embassies worldwide regarding Soviet views on non-proliferation], File No. 209-03797-01, 3-13 September 1962, via Chinese MFA.
[80] By this point the UK (1952) and France (1960) had nuclear weapons.
[81] George Bunn, *Arms control by committee, managing negotiations with the Russians* (Stanford: Stanford University Press, 1992), pp. 64-72.
[82] Robert Johnson, 'The Chinese Communist nuclear capability and some 'unorthodox' approaches to the problem of nuclear proliferation,' 1 June 1964, Policy Planning Council Records, 1963-64, box 264, LBJ library.
[83]Michael Lumbers, *Piercing the bamboo curtain, tentative bridge-building to China during the Johnson Years* (Manchester: Manchester University Press, 2008), p. 37.

nuclear potential.[84] The superpowers, it would seem, did not want a nuclear armed China in their model for nuclear order. As a declassified report from the US Arms Control and Disarmament Agency (ACDA) highlights, the US and the USSR also saw 'no useful purpose' in China's involvement in the Eighteen Nation Disarmament Committee (ENDC), since 'their participation would only have a disruptive effect'.[85]

In any case, China completely rejected the nuclear monopoly (*he long duan* 核垄断) model as it termed it. The Chinese wanted no part in any agreements that could potentially prevent it from becoming a nuclear power. By the early 1960s, China no longer supported Soviet approaches to arms control and disarmament. In China's view, Moscow had switched sides.[86] The Soviets had also capitulated over the 1962 Cuban Missile Crisis.[87] The PTBT and NPT, as well as other initiatives, such as the 1963 Hotline agreement, the ENDC, and the Asian Atom Free Zone were all dismissed by China as fraudulent and exclusive.[88] On 2 August 1963, a Chinese statement in *Renmin Ribao* outlined its position in more detail: 'it is absolutely impermissible for two or three countries to brandish their nuclear weapons at will, issue orders and commands, and lord it over the world as self-ordained nuclear overlords, while the overwhelming majority of

[84] Gerard Smith was director of the State Department's Policy Planning Staff, and later director of the Arms Control and Disarmament Agency. See Department of State, 'Fissile Material Cut-off Proposal', Top Secret Memorandum, S/P-609-2A, 16 February 1960, U.S. Nuclear History Collection, No.NH00068, via DNSA.
[85] ACDA Declassified Eighteen Nation Disarmament Committee US Contingency Position Paper #2/Rev.1, 'Communist China's Participation', 1964, Disarmament NSF Subject File, Vol.2, Box 14, LBJ Library.
[86] *Jiefangjun Bao*, 'Heluxiaofu beipan shehui zhuyu zhenying lian Mei fanhua' [The joint U.S. anti-China, Khrushchev's betrayal of the socialist camp] 3 August 1963.
[87] *Jiefangjun Bao*, 'Sulian lingdao ren de zhubu touxiang shi diguo zhuyi yinmou dada decheng' [Soviet leaders surrender to imperialist plot], 9 September 1963. On China's reaction to the Cuban Missile Crisis, see *Jiefangjun Bao*, 'Guba renmin jianjue douzheng weihule minzu duli he guojia zhuquan xiandai xiuzheng zhuyi zhe tuoxie touxiang bing wei neng huan lai zhanzheng heping'[A resolute struggle for the Cuban people to safeguard independence and sovereignty against modern revisionists], 24 October 1963.
[88] In Chinese, the NPT is known as *bu kuosan hewuqi tiaoyue* 不扩散核武器条约, and the PTBT as *sanguo bufen jinzhi heshiyan tiaoyue* 三国部分禁止核试验条约. For more, see Pan Zhenqiang, 'Seeking a better approach to end the nuclear arms race: a retrospective on the Partial Test Ban Treaty', *Disarmament*, Vol. XII, No.1, 1988/89, pp. 25-32; and *Jiefangjun Bao*, 'Yuehanxun xuanbu yi xiang xin de hepian' [Johnson announced a new nuclear scam] 23 April 1964.

countries are expected to kneel and obey orders meekly, as if they were nuclear slaves'.[89] Simply put, for China, the superpower model masked discriminatory attempts by the superpowers to consolidate their nuclear monopoly and constrain China's nuclear development.

In particular, the Chinese considered the PTBT, NPT and MLF 'big scams' (*da pianju* 大骗局) intended by the superpowers to pressure China to abandon its nuclear programme.[90] The PTBT was particularly problematic for China since it did not extend to underground testing and disarmament was not mentioned.[91] Analysis from China's Foreign Ministry at the time contended that, 'the key purpose of this treaty is to make all peace-loving countries, China included, unable to increase their defensive force by the partial test ban, so that the US can make unbridled threats and blackmail against them'.[92]

Socialist Proliferation

Although China rejected the superpowers' nuclear initiatives, it did not reject the principle of global nuclear order *per se*. Instead, China put forward what Young describes as a 'strongly stated and doctrinally buttressed position' favouring the proliferation of nuclear weapons to socialist states and 'peace-loving neutralist non-aligned' countries.[93] According to Zhou Enlai in 1961, 'if all countries have nuclear weapons, the possibility of

[89] Reprinted in *Peking Review*, No. 32, 2 August 1963, p. 8.
[90] The superpower model perhaps reflected China's past experience of unequal treaties at the hands of foreign powers and so had the reverse effect on China's nuclear ambitions, see Gerrit W. Gong, 'China's entry into International Society', in Hedley Bull and Adam Watson, eds., *The Expansion of International Society* (Oxford: Clarendon Press, 1988), pp. 171-183.
[91] By 1963 France had rejected the PTBT as well. For more on the Chinese position, see *Peking Review*, No. 31, 1963; and Zhou Enlai, 'Women weishenme fandui sanguo bufen tingzhi heshiyan tiaoyue- zhe shi tong Kenniya keizhou minzu lianmeng daibiao tua de tanhua jielu', [Why we are against the PTBT? Discussion with the Kenya African Union delegation], 5 September 1963, in *Zhou Enlai wenhua wenxuan* [Zhou Enlai selected works].
[92] Quoted in Yixian Xie, *A Diplomatic History of China 1949-1979* (Zhengzhou: Henan People's Press, 1988), pp. 301-302; see also 'Tingzhi heshiyan shi yi ge da pianfu' [The banning of nuclear tests is a big fraud], File No. 113-00450-10, 18 July 1963, Chinese MFA.
[93] Oran R. Young (b), 'Chinese Views on the Spread of Nuclear Weapons' in Morton H. Halperin, eds., *Sino-Soviet Relations and Arms Control*, (Cambridge, Mass., 1967), pp. 20-21.

nuclear wars would decrease'.[94] This position is labelled here in brief as 'socialist proliferation'. It can be understood as an alternative, albeit tentative, blueprint for global nuclear order to that being offered by the superpowers. If realized, socialist proliferation would have had deep strategic and ideological implications for nuclear order by encouraging an increasing number of states to develop nuclear arsenals, in direct opposition to the superpower model for nuclear order.

According to the socialist proliferation model, breaking nuclear monopoly would ensure strategic stability (*zhanlue wendingxing* 战略稳定性) and shift nuclear advantage (*he youshi* 核优势) to the Communist bloc.[95] Vertical proliferation (within nuclear weapons states), not horizontal proliferation, was a greater concern since the former caused the latter in China's view. The socialist proliferation model was also considered more inclusive, appealing directly to non-nuclear actors. This was in direct contrast to the discrimination embedded within the superpower model. China thus openly supported the proliferation of nuclear weapons between 1961 and 1964. For instance, on 21 September 1962, China's Foreign Minister, Chen Yi declared that 'nuclear weapons in the hands of socialist countries are important guarantees to defeat the imperialist policy of nuclear blackmail…this is entirely different in nature from the possession of nuclear weapons by imperialists'.[96] A year later, Chen Yi stated: 'Did the danger of nuclear war become greater or less when the nuclear powers increased from one to two? We say it becomes less, not greater…nuclear weapons are detrimental to peace if they are in the hands of the imperialist countries, it helps peace if they are in the hands of socialist countries'.[97]

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[94] Quoted in Zhu, 'The Evolution of China's Nuclear Nonproliferation Policy', pp. 40-48.
[95]'Huang zhen fu waizhang jiejian Sulian zhuhua shiguan linshi daiban tanhua jilu (Sulian tongyi Meiguo juxing tanpan qianding bu kuo san he wu qi de xieding)' [Record of meeting between Huang Zhen China's Vice Minister, and the Soviet Ambassador to China to discuss Soviet-American agreement to hold a meeting to sign the NPT], File No. 109-02552-02, 25 August-3 September 1962, Chinese MFA.
[96] Young (b), 'Chinese views on the spread of nuclear weapons', p.23.
[97] Quoted in ibid, p. 21.

Even if only rhetoric, China's statements regarding socialist proliferation served various ideological and strategic goals.[98] In terms of ideology, it was intended to accelerate the trend of history towards a world communist revolution, and defend against imperialist nuclear threats and blackmail.[99] Strategically, it bolstered deterrence since more nuclear weapons would 'increase the credibility of the overall socialist deterrent'.[100] Furthermore, as Halperin suggests, socialist proliferation provided added justification for China's nuclear weapons development.[101] As a nuclear power, China could arguably offer weaker bloc members an extended deterrent more viable than the USSR now that its former ally was engaged in developing Mutual Assured Destruction as a strategic doctrine.

It is important to highlight that the Chinese model did not favour the indiscriminate proliferation of nuclear weapons. It favoured the spread of nuclear weapons only to specific types of countries. Further, the model was driven primarily by a need to defend the sovereign right of states to possess nuclear weapons, and highlight the discriminatory nature of the superpower model for nuclear order. Accordingly, 'all peace loving countries are naturally entitled to manufacture nuclear weapons'.[102] Moreover, disarmament was officially the ultimate goal of the Chinese model. The Chinese argued that only by promoting socialist proliferation could imperialism be forced to abjure the initiation of nuclear war, and thereby contribute to the complete prohibition of nuclear weapons. In other words, socialist proliferation allegedly paved the way for eventual disarmament by eliminating the threat of imperialism first. According to China's spokesperson for the World Federation of Trade Unions in June 1960, 'general and complete disarmament

[98] Statement of the People's Republic of China, 15 August 1963 in *People of the world, unite and struggle for the complete prohibition and thorough destruction of nuclear weapons!* (Peking: Foreign Language Press, 1971), p. 22; and Oran Young (a), 'Chinese views on the spread of nuclear weapons', *The China Quarterly*, No. 26, 1966, pp. 136-170.
[99] Hsieh, 'Communist China and nuclear force', pp. 6-7.
[100] Zhu, 'The Evolution of China's Nuclear Nonproliferation Policy', p. 43.
[101] Halperin, *China and the Bomb*, pp. 45-46.
[102] Quoted in Hsieh, 'Communist China and nuclear force', p. 172, ft. 39.

cannot be realised while imperialism and capitalism still exists'.[103] Indeed, on 31 July 1963, China called for a world summit on disarmament to discuss the withdrawal of nuclear weapons based abroad; establishing nuclear-free zones around the world; the non-export and import of nuclear weapons and technology; and a halt to all testing.[104]

In sum, in the early to mid 1960s, China abandoned the Soviet line and rejected the superpower model for nuclear order, offering instead its own blueprint for order, socialist proliferation. Despite China's claim to the contrary, there was an implied tension in its own model since socialist proliferation called initially not for the elimination of nuclear weapons, but for their spread. Perhaps this indicated a lack of genuine commitment to disarmament on China's part, or was simply a reflection of the uncertain security environment at that time. In any event, socialist proliferation, though unrealized by 1964, was an important example of Chinese engagement with the creative process of developing global nuclear order.

Superpower responses to China's imminent nuclear weapons status

Beyond socialist proliferation, developments within China's nuclear weapons programme between 1963 and 1964, namely its imminent nuclear status, had important implications for thinking about global nuclear order. Initially, as China drew closer to testing its first nuclear device, the threat of preventive attacks denying China entry into the nuclear club was extremely high. Chang contends that US President Kennedy seriously discussed using force, possibly with Soviet aid, to attack Chinese nuclear installations.[105]

[103] Liu Cheng-Sheng quoted in Chiu, 'Communist China's attitude towards nuclear tests', p. 96.
[104] Alice Hsieh, 'The Sino-Soviet Nuclear Dialogue', *Journal of Conflict Resolution*, Vol. 8, No. 2, 1964, pp. 99-115.
[105] Gordon Chang, 'JFK, China and the bomb', *The Journal of American History*, Vol. 74, No.4, 1988, p.1300. In a 15 July 1963 cable, Kennedy instructed assistant secretary of state Harriman to 'elicit Khrushchev's view of…limiting or preventing Chinese nuclear development and his willingness either to take Soviet action or to accept US action'.

President Johnson similarly contemplated the use of force.[106] According to Lumbers, Kennedy's fear of China was 'intense and longstanding'. He saw China as 'militant, expansionist…with no regard for American conceptions of international order'.[107] Likewise, National Security Advisor Bundy considered a nuclear armed China 'the greatest single threat to the status quo over the next few years.'[108] According to US intelligence reports, given that China did not seem to share the same fear of nuclear war as the superpowers, its behaviour vis-à-vis Taiwan and a border war with India in 1962, it was likely a nuclear-armed China would become increasingly threatening.[109] There also existed fears that a nuclear armed China would weaken US influence in Asia. These fears were compounded by the impenetrable veil of secrecy that shrouded the Chinese programme.[110]

Fortunately for China, Soviet support for joint action with the US to destroy Chinese nuclear facilities was not forthcoming. In 1963 and 1964, Soviet Ambassador Dobrynin rebuffed Bundy on this matter. Indeed, in July 1963, Khrushchev told Harriman that China would be less truculent once it had nuclear weapons.[111] Furthermore, more moderate assessments of Chinese behaviour by Robert Johnson of the State Department reached the American President in April 1964. These reports suggested that China considered nuclear weapons a 'political weapon…to earn respect'.[112] It would be a

[106] Foot, *Practice of Power*, p. 181; William Burr and Jeffrey Richelson, 'Whether to "strangle the baby in the cradle" the US and the Chinese nuclear programme, 1960-64', *International Security,* Vol. 25, No.3, 2000/2001, pp. 54-99; and DOD Office of the Assistant Secretary for International Security, 'Nuclear Power (Some Thoughts Prior to the Chinese Test)', 1-29442/64, 7 October 1964, Collection: China and the U.S., No. CH00020, via DNSA.
[107] Lumbers, *Piercing the bamboo curtain*, p. 37 and p. 42.
[108] See Memo, Bundy to Kennedy, 8 November 1962, in *FRUS*, 1961–1963, Vol. 7, p. 598.
[109] David Holloway, 'Assessing China's Nuclear Policy', unpublished and undated paper provided to author.
[110] William Burr and Jeffrey Richelson, 'A Chinese Puzzle', *The Bulletin of Atomic Scientists*,Vol. 53, No. 4, 1997,pp. 42-47.
[111] This is contrary to US intelligence and the Soviet polemics of 1963-1964. My thanks to Professor David Holloway of Stanford University for this point.
[112] Robert Johnson, US Department of State Policy Planning Council, 'Implications of a Chinese Communist nuclear capability', Secret Paper, 17 April 1964, China and the U.S. Collection, No. CH00017, via DNSA.

cautious nuclear weapons power, he assured, and decreed an attack on Chinese nuclear facilities as inadvisable. President Johnson, facing a presidential election and the onset of further fighting in Vietnam, was determined to avoid a confrontation with China. So, on 15 September 1964, the US decided to do nothing to stop the Chinese nuclear test.[113]

Instead, the US turned to other options to address China's imminent nuclear test. Various ideas had been circulating in intelligence reports during the 1960s.[114] They all had one approach in common: isolating rather than incorporating China into the emerging nuclear order. One idea centred around 'atomic alliances': from encouraging India to become an 'atomic ally';[115] the arming of selected Asian states such as Japan and Taiwan with US nuclear weapons; [116] to the provision of nuclear systems to Australia.[117] The objective was to develop a regional non-communist ally to offset Chinese dominance. However, this idea was unpopular among European and Asian allies that were at the time inclined to improve relations with China.[118]

A second idea sought to devalue potential psychological and political gains China might enjoy following a nuclear detonation.[119] This proposal was widely implemented

[113] Burr et al., 'Whether to "strange the baby in the cradle"', pp. 85-87.
[114] Robert Johnson,'A Chinese Communist Nuclear Detonation and Nuclear Capability: Major Conclusions and Key Issues', 15 October 1963; and'Notice of DOD Contract with Institute for Defense Analyses to Study Communist Chinese Acquisition of Nuclear Weapons', Cable 902496, 14 September 1961, Nuclear Non-Proliferation Collection, No. NP00798, all via DNSA. A declassification request by the author for this report was denied. For Chinese analysis, see Liu Zikui and Wang Zuocheng, 'Meiguo shengfu dui Zhongguo fazhan hequwi de fanying yu duice',[Reaction and countermeasures of the American government to the nuclear weapon development by China 1961-1964] *Gong chang shi yanjiu* [*China Contemporary History Research*], March 2007, pp. 44-53; and Xin Zhan, 'Shi lun Meiguo dui Zhongguo hewuqi yanzhi de pinggu yu duice' [On the US evaluation of and counter-measures against China's nuclear weapons development], *Gong chang shi yanjiu* [*Contemporary China History Research*] Vol. 8, No.3, May 2001, pp. 86-94.
[115] George C. McGhee, US Department of State. Office of the Under Secretary for Political Affairs, 'Anticipatory action pending Chinese communist demonstration of a nuclear capability', Top Secret Memorandum, 13 September 1961, China and the U.S. Collection, No. CH00006, via DNSA.
[116] John E. Endicott, *Japan's nuclear option: political, technical, and strategic factors* (New York: Praeger, 1975), pp.46-68.
[117] John K.Gerhart, 'Long-Range Threat of Communist China', Secret Memo, 8 February 1961, China and the U.S. Collection, No. CH00003, via DNSA.
[118] Lumbers, *Piercing the bamboo curtain*, p. 75.
[119] George C. McGhee, 'Programme to influence world opinion with respect to a Chicom nuclear detonation', Secret Memorandum, 24 September 1962, China and the U.S. Collection, No. CH00010, via DNSA.

across US government agencies. A third option was to press more firmly for a legal framework to constrain the proliferation of nuclear weapons, motivated by fears that a Chinese test would provoke other states in Asia to develop these weapons. Indeed, according to President Kennedy, China's nuclear program was 'the whole reason for having a test ban'.[120] In other words, this option called for the legal implementation of the superpower model for nuclear order. So, instead of preventive attacks in 1963 and 1964, China's nuclear activities prompted the US to move towards the conclusion of key aspects of its model for nuclear order: international agreements such as the PTBT and NPT.

Understanding Chinese Engagement

The second section of this chapter has demonstrated that in the early to mid 1960s, China continued with its nuclear programme even when Soviet aid ended in 1960, influenced largely by the strategic environment at that time (US military prowess, isolation following the Sino-Soviet split, and a desire for self reliance), and the need to ensure, as the PLA's 1961 *Bulletin of Activities* highlights, self-preservation.[121] China's nuclear weapons development was thus largely driven by an important security rationale. Nuclear weapons were also considered by senior Chinese officials as important symbols of national economic and technological progress and development. As Chen Yi stated in 1963: 'A-bombs, missiles…all these are reflective of the technical level of a nation's industry. China will have to resolve this issue…otherwise it will degenerate into a second or third class nation'.[122] Furthermore, according to Hymans, following the Sino-Soviet split, Mao

[120]Seaborg diary, entry 8 February 1963, quoted in Marc Trachtenberg, *A Constructed Peace: The Making of the European Settlement, 1945-1963* (Princeton: Princeton University Press, 1999), p. 384.
[121]This document is discussed in Alice Hsieh, 'Red China's military doctrine', *Military Review*, February 1965, pp. 23-30.
[122]Said to Japanese Kyoto News in October 1963.

wanted not only a nuclear bomb but a *Chinese* nuclear bomb.[123] Prestige thus represents an important factor driving China's nuclear ambitions during the early to mid 1960s.

A second important development emerged in the early 1960s, when the US and the Soviet Union offered a model for nuclear order based on non-proliferation which served to concentrate power in their hands. In contrast, China, no longer aligned to the USSR on matters related to arms control and disarmament, put forward an ideological vision, termed here socialist proliferation, promoting the spread of nuclear weapons to socialist and 'peace-loving' countries. This served China's strategic, political and ideological goals. More importantly, it contributed indirectly to wider thinking about how to construct global nuclear order because it highlighted discriminatory aspects of the superpower model and offered an alternative framework that was more inclusive, appealing directly to non-nuclear actors.

Conclusion

This chapter has explored Maoist China's engagement with the process of creating global nuclear order between 1949 and 1964. It has focused in particular on how ideas related to nuclear order emerged and China's role in that process; as well as the methods and motivations behind Chinese engagement. In this regard, this chapter has demonstrated that it would be overly simplistic to argue that because China rejected agreements such as the PTBT and NPT, and disparaged nuclear weapons as paper tigers, that therefore it eschewed the idea of nuclear order. In fact, China participated in the creation of nuclear order in various ways. More concretely, China's nuclear behaviour influenced the views of others (notably the two superpowers) on how nuclear order should be constructed.

[123]Jacques Hymans, 'How Did China's Nuclear Weapons Project Succeed?', paper presented at the ISA conference in New Orleans, February 2010, p. 15.

Overall, Maoist China engaged in two main ways: first by deciding in 1955 to initiate a nuclear weapons programme; and then by offering a model for nuclear order, socialist proliferation, in the early 1960s. In addition, in the 1950s, China was aligned with Soviet positions on arms control and disarmament. Although these initiatives failed, they gave rhetorical support for the idea of disarmament. In essence, the decision to develop nuclear weapons in 1955 and to continue unaided in this quest after 1960 represents an important form of Chinese engagement influencing the superpowers to push ahead with their own model for nuclear order, based on non-proliferation. China then rejected the superpowers model for nuclear order, and offered an alternative model, socialist proliferation. If realized, socialist proliferation would have represented a direct form of engagement with the process of creating nuclear order by promoting proliferation contra the superpowers' model. Instead, it contributed indirectly to wider thinking about how to construct nuclear order by highlighting discriminatory aspects of the superpower model and offering an alternative model that was more inclusive, appealing to non-nuclear actors.

In understanding China's engagement, three variables have been particularly powerful. The first relates to status and prestige. Facing growing international isolation during the 1950s and 1960s at forums such as the UN, and following the Sino-Soviet split, China saw nuclear weapons as crucial in improving its status domestically, regionally and internationally. Likewise, nuclear weapons were considered by the Chinese as important symbols of economic and technological development. Second, external pressure, in particular nuclear threats against China by the US in the 1950s and 1960s served to further motivate China's nuclear ambitions. Third, changes in alliance politics following the loss of a nuclear armed ally, the Soviet Union, provided an added security motivation for China to develop nuclear weapons.

Ultimately, between 1949 and 1964, Maoist China, driven largely by concerns related to image and security, indirectly participated in the creation of nuclear order by shaping the views of others regarding how that order should be constructed. Indeed, China inadvertently provided impetus for the emergence of a model for nuclear order to which it was ostensibly opposed. The emergence of this model as the basis for nuclear order, and the impact of China's nuclearisation in that process, will be explored in the next chapter.

Chapter Three
China's nuclearisation and the emergence of nuclear order, 1964-76

This chapter will evaluate Maoist China's engagement with the emerging global nuclear order after it became the world's fifth nuclear weapons state on 16 October 1964.[1] More concretely, this chapter offers an assessment of the initial post-detonation phase of China's nuclear history until the passing of the CCP leader, Chairman Mao Zedong, in 1976. It is divided into three sections. The first section outlines global nuclear developments in the mid to late 1960s and the gradual emergence of a nuclear order based around superpower ideas. The second section focuses on immediate reactions, both global and regional, to China's nuclear test in 1964, and the implications of China's nuclearisation for emerging nuclear order. The second section examines China's behaviour as a nuclear weapons state towards the core elements of emerging nuclear order, namely arms control, non-proliferation, disarmament and deterrence. In particular, this section highlights the decision to abandon 'socialist proliferation' and, instead, to focus on building a secure and credible deterrent during a period of extreme internal turmoil, namely the Great Proletarian Cultural Revolution between 1966 and 1976, and external security threats such as the Sino-Soviet border war in 1969.

Overall, this chapter will argue that between 1964 and 1976, Maoist China abandoned one of its first forms of engagement with nuclear order, 'socialist proliferation', and instead retreated from the process of creating global nuclear order. This move is perhaps unsurprising since by then, the superpower model for nuclear order had begun to

[1]This chapter draws upon a similar set of sources as chapter two, including documents from the archives of the Ministry of Foreign Affairs of the People's Republic of China (hereafter Chinese MFA) covering the 1964-1965 period, the *Digital National Security Archives* (DNSA), *Foreign Relations of the United States* (FRUS), *Cold War International History Project* (CWIHP), *Peking Review*, *Renmin Ribao (People's Daily), Jiefangjun Bao (PLA Daily*), and the Universities Services Center's (USC) Cultural Revolution Library, *Zhongguo wenhua dageming wenku*, 中国文化大革命文库.

take deeper effect. Ultimately, by 1976, Maoist China came to influence in a passive sense rather than actively contribute to global nuclear order as it eventually emerged.

Emergent Global Nuclear Order

By the time China had successfully tested a nuclear device in October 1964 important developments in the creation of a global nuclear order were underway, most notably negotiations towards what would become a key institutional aspect of global nuclear order, the Non Proliferation Treaty (NPT). This treaty was signed in 1968 by the three 'depositary states'--the US, USSR and UK--and entered into force in 1970. [2] By then, a total of 74 countries had signed the treaty, making it the most universal nuclear treaty ever signed.[3] Undoubtedly, the NPT marks a crucial turning point in the history of global nuclear order because it relates to issues of direct relevance to that order, namely non-proliferation, disarmament and the peaceful use of nuclear energy. In particular, the NPT contains key bargains that afford considerable legitimacy to global nuclear order: first, that nuclear weapon states would work in good faith toward disarmament; second, nuclear armed states would not transfer nuclear weapons to non-nuclear weapon states; and third, nuclear states would recognise the 'inalienable right' of non-nuclear weapon states to access nuclear energy for civilian uses. In exchange, non-nuclear weapon states promise not to develop nuclear weapons. [4]

The bargains embedded within the NPT established disarmament and non-proliferation as mutually reinforcing. However, in many respects, the NPT signalled an acceleration of a shift already underway from disarmament, prevalent in the 1950s,

[2] Mohamed Shaker, *The Nuclear Non-Proliferation Treaty: Origin and Implementation, 1959-1979*, Vols. I-III (London: Oceana Publications, 1980), pp. 3-20.
[3]Center for Nonproliferation Studies, Inventory of International Nonproliferation Organizations and Regimes, http://www.nti.org/media/pdfs/apmnpt.pdf?_=1316545627&_=1316545627 [accessed 10 March 2012]
[4] William Walker, *Report on the Wilton Park Conference*, WP1008, Nuclear Non-proliferation and the 2010 Review Conference, 14-18 December 2009; and David Holloway, 'The United States and the NPT "Double Bargain"', unpublished paper presented at Nobel symposium in Oslo, Norway, revised November 2009.

towards non-proliferation and arms control.[5] This shift in thinking was particularly evident in the Gilpatric committee report, commissioned by US President Johnson on 1 November 1964, shortly after the Chinese nuclear test. [6] It discussed how best to prevent the further spread of nuclear weapons, and crucially, how to include China in agreements such as the NPT. [7] The committee report concluded with various recommendations, among these a non-proliferation treaty, comprehensive test ban and nuclear weapons free zones.[8] The Gilpatric committee arguably represented a significant stepping stone in the construction of nuclear order, offering new ways of thinking about arms control and proliferation, and the nature of relations between the US, USSR, Europe and Asia. Indeed, for Michael Krepon, the global nonproliferation system was built on the Gilpatric Committee's recommendations. [9] Similarly, according to Hal Brands, the report offered 'an early conception of arms control and nonproliferation…that eventually took hold'.[10]

[5]Disarmament remained relevant- in 1969 the Conference of the Committee on Disarmament was established.
[6] The committee was formerly known as the Committee on Nuclear Proliferation.
[7] For the report, see Arthur H. Dean, Allen W. Dulles, Alfred M. Gruenther, George B. Kistiakowsky, John J. McCloy, James A. Perkins, Arthur K. Watson, William H. Webster, Herbert F. York and Roswell L. Gilpatric, *Report to the President by the Committee on Nuclear Proliferation*, 21 January 1965, Nuclear Non-Proliferation Collection No. NP01104, via DNSA; and *FRUS*, Arms Control and Disarmament, Volume XI, 1964-1968. For excellent analysis of the committee, see Francis J. Gavin, 'Predicting proliferation during the 1960s: The Story of LBJ's Gilpatric Committee', Center for International Security and Cooperation, 20-21 June 2003; Francis J. Gavin, 'Blasts from the Past: Proliferation Lessons from the 1960s', *International Security*, Vol. 29, No. 3, 2004/05 pp. 100-135; and Glenn Seaborg and Benjamin Loeb, *Stemming the Tide, arms control in the Johnson years* (Toronto: Lexington Books, 1971), p.132, p. 139 and p. 141.
[8]Four options were put forward by the committee: endorse nuclearisation among allies, maintain current policy, universalise proliferation, or support pre-emption and counter-proliferation. The committee's recommendations settled between options three and four, see Gavin, 'Predicting proliferation', pp. 11-16. There has been some debate as to immediate influence of the report on US policymaking but Brands and Schwartz respectively demonstrate that the committee was pivotal. See Hal Brands, 'Rethinking non-proliferation: the LBJ, the Gilpatric Committee and the U.S. National Security Policy', *Journal of Cold War Studies*, Vol. 8, No.2, Spring 2006, pp. 83-113; and Thomas Schwartz, *Lyndon Johnson and Europe: In the Shadow of Vietnam* (Cambridge: Harvard University Press, 2003). For Brands, the report afforded authority to the US Arms Control and Disarmament Agency (ACDA) and pushed the US into abandoning the idea of nuclear sharing, aiding passage of the NPT, pp. 106-110. For an alternative view, see Shane J. Maddock, *The Nth Country Conundrum: The American and Soviet Question for Nuclear Non-proliferation 1945-1970*, PhD thesis, University of Connecticut, 1997; Shane J. Maddock, 'H-diplo review of Hal Brands', 29 May 2007; and Raymond Garthoff, *A Journey through the Cold War: A Memoir of Containment and Coexistence* (Washington: Brookings Institution, 2001), p. 194.
[9] Michael Krepon, 'Proliferation: then and now', Stimson Center Briefing, 1 January 2006, http://www.stimson.org/essays/proliferation-then-and-now/ [accessed 20 October 2009]
[10] Brands,'Rethinking non-proliferation', p.113

These perspectives are probably correct: between 1967 and 1976, various arms control and non-proliferation agreements were concluded, for instance the Tlatelolco Treaty for a Nuclear Free Zone in Latin America and the Caribbean (1967), the NPT (1968), the Seabed Treaty (1971), the Strategic Arms Limitation Talks, SALT I (1972)[11], the Anti-Ballistic Missile Treaty, ABM (1972), the Prevention of Nuclear War Agreement between the US and USSR (1973), Mutual and Balanced Force Reductions in Europe (1973), the Threshold Test Ban Treaty (1974), and the Peaceful Nuclear Explosion Treaty (1976).[12] In addition, within the IAEA two safeguards agreements were concluded: the 1965 (INFCIRC/66) pre-NPT Safeguards Model and the 1971 (INFCIRC/153) NPT Model Comprehensive Safeguards Agreement.

Added to this focus on non-proliferation and arms control, the superpowers continued in the 1960s to concentrate on nuclear deterrence, experimenting with various strategies until a condition of mutual assured destruction (MAD) emerged.[13] In this regard, on 18 February 1965, US Secretary of Defense Robert McNamara stated that the US would rely on assured destruction to deter the Soviet Union. Wider-ranging debates had taken place on MAD leading to the adoption of Flexible Response in NATO doctrines.[14] In addition, the USSR had pursued a warfighting strategy whilst the US oscillated between Massive Retaliation, Flexible Response and Limited War until a condition of parity and MAD emerged. MAD called for the preservation rather than the destruction of the nuclear

[11] In 1972, negotiations for SALT II began.

[12] For full texts of these treaties see FAS, http://www.fas.org/nuke/control/index.html; the Multilaterals Project at Tufts University, http://fletcher.tufts.edu/multilaterals/warfare.html; and the UN Office for Disarmament Affairs, http://disarmament.un.org/treatystatus.nsf/ [all accessed 2 April 2010]

[13] For more on MAD, see Richard Smoke, *National Security and the Nuclear Dilemma: An introduction to the American Experience in the Cold War* (New York: McGraw-Hill, 1993), pp.72-75; Ken Booth, 'Disarmament and arms control' in John Baylis et al., ed., *Contemporary Strategy* Volume I (London: Holmes & Meier, 1987), p. 141; Lawrence Freedman, *The Evolution of Nuclear Strategy*, (Hong Kong: Macmillan, 1989), pp. 76-90 and pp. 155-171; and Henry D. Sokolski, ed., *Getting MAD: Nuclear Mutual Assured Destruction, its Origins and Practice* (Strategic Studies Institute, November 2004).

[14] On these debates, see Helga Haftendorn, *NATO and the Nuclear Revolution* (Oxford: Oxford University Press, 1996).

threat. In an illogical and perverse sense, self-endangerment was encouraged and rationalised for the purpose of security. A TRIAD consisting of long range intercontinental missiles (ICBMS), submarines launched ballistic missiles (SLBMs) and bombers, underscored a second strike force capability and became a key element of MAD. Arms control efforts, such as the 1972 ABM treaty, further reinforced assured destruction by prohibiting the development of missile defences since these might undermine MAD.

Thus, throughout the mid to late 1960s and early 1970s, beyond disarmament, the three other core elements of nuclear order began to take shape: nuclear deterrence, based on MAD; nuclear arms control, of which the SALT and ABM were crucial; and non-proliferation, centred on the NPT.

China's nuclear tests and their impact on nuclear order

The emergence of nuclear order discussed above can be attributed to several global developments. In particular, the fear of nuclear war heightened by the superpower arms race in the 1950s and 1960s, and the 1962 Cuban Missile Crisis; powerful anti-nuclear and disarmament movements; the Eighteen Nation Disarmament Committee (ENDC), which played a key role in NPT negotiations between 1962 and 1965;[15] and the failure of Atoms for Peace, which had resulted in the global diffusion of nuclear material.[16] The Soviet Union was particularly concerned with the prospect of a nuclear armed Germany, and a Multilateral Nuclear Force in Europe.[17] In the US, the Gilpatric committee acted as a driver for the NPT agenda, deliberating proliferation concerns with regards to Israel, Germany, India and China.[18] In addition, it is argued here that China's nuclear test in 1964

[15] Shaker, *The Nuclear Non-Proliferation Treaty*, p. 40.
[16] Some argue Atoms for Peace helped proliferation, in particular with regards to India's PNE in 1974, see Leonard Weiss, 'Atoms for Peace', *Bulletin of the Atomic Scientists*, Vol. 59, No.6, November 2003, pp. 40-44; and Shaker, *The Nuclear Non-Proliferation Treaty*, pp.14-15.
[17] Shaker, *The Nuclear Non-Proliferation Treaty*, p.89.
[18] Francis J. Gavin, 'Nuclear proliferation and non-proliferation during the Cold War' in Melvyn P. Leffler and Odd Arne Westad, eds., *The Cambridge History of the Cold War*, Vol. II (Cambridge: University of

had an impact on not only this committee but also on the wider process of creating global nuclear order.

First, above all, China's nuclear test demonstrated that with the expansion of the nuclear club worldwide into Asia, a nuclear order was needed more than ever to contain and curtail the spread of nuclear weapons. As Shaker highlights, 'China's ascendancy to nuclear status brought the non-proliferation question to public attention'.[19] Various US National Intelligence Estimates (NIE) during the 1960s,[20] including a 1964 US National Security Council report,[21] contended that China's nuclearisation was likely to serve as an example for others to develop nuclear weapons, in particular Japan, Indonesia, and India, but also Brazil and Argentina. These fears remained throughout the 1960s, with a 1969 Pentagon report stating that 'Chinese possession of nuclear weapons…has increased the possibility of a desire for proliferation among other nations, particularly in Asia'.[22]

However, these fears were perhaps misplaced. Initial international reactions to China's nuclear testing were largely muted.[23] The US and the Soviet Union were quiet about China's tests[24]--though certain US intelligence documents between 1965 and 1972

Cambridge Press, 2010). Percovich also highlights a tightening of the non-proliferation regime following India's PNE in 1974 when the Zangger Committee met to discuss tougher supply conditions, the Nuclear Suppliers Group was formed and the IAEA sought to regulate trigger-listed technologies. See *India's Nuclear Bomb, impact on nuclear proliferation* (Oxford: Oxford University Press, 1999), p.187.

[19] Shaker, *The Nuclear Non-Proliferation Treaty*, pp. 90-91. See also Hanson Baldwin, 'China's Bomb: Grave Problems Posed for the West', *The New York Times*, 18 October 1964, p. E3.

[20] NIE, 'Nuclear Weapons Programs around the World', Top Secret Memo, Weapons of Mass Destruction Collection, Item Number: WM00093, 3 December 1964, via DNSA; and Memorandum for the President, 'The Diffusion of Nuclear Weapons With or Without a Test Ban Agreement', 00892, via DNSA. On 13 October 1960, at the third Nixon-Kennedy Presidential Debate, Kennedy stated that 'there are indications because of new inventions, that 10, 15, or 20 nations will have a nuclear capacity, including Red China, by the end of the Presidential office in 1964'.

[21] National Security Council (NSC), 'The Value and Feasibility of a Nuclear Non-Proliferation Treaty', 12 December 1964, NSF, Committee on Non-Proliferation, Box 2, LBJ Library, p.1.

[22] US Department of Defense, Response to National Security Study Memorandum #9: 'Review of the International Situation', 23 January 1969, Collection: Presidential Directives, Part II, Item Number: PR00325, via DNSA.

[23]'Ge fang dui wo dierci he baozha de fanjing zongjie' [Summary of reactions to our second nuclear test], File No. 113-00410-04, 29 May 1965, Chinese MFA.

[24] This is perhaps unsurprising since the superpowers were expecting the test, and were likely preoccupied with other events at the time, such as Khrushchev's fall from power and the US presidential election. Furthermore, the US was trying to downplay the significance of the test, see Rosemary Foot, *The Practice of*

have now revealed that there was some support in the USSR for destroying China's nuclear capabilities before they would develop into a real threat.[25] Overall, the Chinese were surprised at the lack of condemnation in non-Communist parts of the world and Asia, although, as will be discussed below, Taiwan, Japan and India did voice their discontent.[26] It is important to note that China was keen to minimise negative responses to its test, and immediately after the test Premier Zhou Enlai issued a letter to foreign capitals explaining why China had detonated a nuclear bomb.[27] Key aspects of declaratory policy were outlined in this letter: no-first-use (NFU), support for disarmament and self-defence. These efforts perhaps indicate a desire on China's part to be seen as a legitimate and responsible nuclear weapons state, although a security rationale might also have been at their heart.

More importantly, China's test did not spark a predicted cascade of new nuclear states in the region. Although Taiwan and South Korea[28] did seriously engage in nuclear weapons research in the 1960s and 1970s, these programmes were eventually abandoned under US pressure. Of the two, Taiwan was especially vocal in condemning China's nuclear test. Recall that, in the run-up to China's test, Taiwan had appealed to the US to

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Power, U.S. Relations with China since 1949, (Oxford: Oxford University Press, 1997), p. 183. On the USSR, see 'Sulian dui wo zhenggong bao zhan yuanzi de fanying' [Soviet reaction to our successful testing of a nuclear bomb], File No. 109-02712-02, 23 October 1964, Chinese MFA.

[25]In July 1972, Kissinger confessed to the Chinese that earlier that year Brezhnev had put forward a proposal to Nixon to prevent China from becoming a major nuclear weapons power. See Lawrence S.Eagleburger, US Deputy Assistant to the President for National Security Council Operations, 'Discussion with Huang Zhen of Bilateral Issues, Cambodia, and Soviet Union', Memo of Conversation, 6 July 1973, Kissinger Transcripts Collection, No. KT00769, via DNSA, pp. 8-9.

[26] William Ryan and Sam Summerlin, *The China Cloud, America's tragic blunder and China's rise to nuclear power* (London: Hutchinson and Co., 1967), pp. 289-291.Walter Clemens, 'Chinese nuclear tests: trends and portents', *The China Quarterly*, No. 32, 1967, pp. 118-120; 'Zhou Enlai explains China's decision to explode the second atomic bomb', *CWIHP*, Bulletin 10, pp. 227-228; and 'Guanyu Riben jinzhi yuanzidan qingdan guomin huiyi kangyi wo dierci he shiyan laihan de qingshi'[Request instructions for a letter from Japanese Anti-H-bomb National Assembly Movement in protest of China's second nuclear test], File No. 105-01408-02, 15 May-9 June 1965, Chinese MFA.

[27]'Zhou Enlai zongli 1964 nian 10 yue 17 ri guanyu hewuqi wenti geguo shou dianhe wo zhengfu 10 yue 16 ri shengming' [Zhou Enlai's 17 October 1964 letter on the nuclear issue sent to foreign capitals], File No. 113-00467-02, Chinese MFA. NFU is known in Chinese as *bu shouxian shiyong* 不首先使用.

[28] The Nixon Doctrine of 1969 had a greater impact on South Korea's nuclear ambitions than China's nuclear detonation, see Yang-Sun ha, *Nuclear Proliferation, World Order and Korea* (Seoul: National University press, 1985), pp.127; and Jonathan Pollack and Mitchell Reiss, 'South Korea: the Tyranny of Geography and the Vexations of History', in Campbell et al., eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, D.C.: Brookings Institution Press, 2004), p.262.

seriously consider a preventive attack on Chinese nuclear facilities. In addition, as early as 1961, Taiwan's leader Chiang Kai Shek had ordered a secret study into the nuclear option. The 1961 study was largely in reaction to heavy Taiwanese losses following a battle with Chinese forces at Jinmen in 1958. [29] Then, in 1964, following China's nuclear test, Taiwan's Ministry of National Defence drew up a US$140 million proposal to develop nuclear weapons, known as the Hsin Chu programme. By 1974, the CIA estimated that Taiwan would achieve nuclear weapons within five years.[30] The US subsequently engaged in a serious effort to dissuade Taiwan and eventually, in 1976, Taiwan President Chiang Ching Kuo ended the programme.

In addition, throughout the 1960s and 1970s, a series of Japanese prime ministers expressed an interest in the nuclear option. In 1968, Japanese Prime Minister Sato privately commented to US President Johnson, 'if Chicoms [Chinese communists] had nuclear weapons, the Japanese also should have them'.[31] Despite this private position, Sato publically issued the Four Point Nuclear Policy, which included the Three Non Nuclear Principles --to not manufacture, possess or permit the introduction of nuclear weapons onto Japanese territory--and by 1976, Japan had signed and ratified the NPT. Overall, Japan had concluded that it should forgo nuclearisation and instead rely on the US nuclear guarantee.[32]

So, while China's nuclearisation did not lead to a cascade of new nuclear armed states in Northeast Asia, it did perhaps spark greater interest in the nuclear option. More

[29] Jinmen and Matsu are islands between mainland China and Taiwan. This crisis was a continuation of a clash over the islands in 1954. Taiwan had begun to build on these islands and mainland China sought to counter these efforts. Some consider the 1958 crisis an attempt by Beijing to test Soviet allegiance.
[30] David Albright, 'Taiwan: Nuclear Nightmare Averted', *Bulletin of the Atomic Scientists*, Vol. 54, No. 1, 1998.
[31]Kurt M. Campbell and Tsuyoshi Sunohara, 'Japan: Thinking the Unthinkable' in Campbell et al, eds., *The Nuclear Tipping Point*, p. 222.
[32]Nuclear debates in Japan should not be considered solely in terms of China, they are part of a wider and long-standing normalisation debate. See Y Kase, 'The Costs and benefits of Japan's Nuclearization: An insight into the 1968/70 Internal report', *The Nonproliferation Review*, Summer 2001, pp.55-68.

crucially, perhaps, China's test inadvertently led to the fortification of US extended nuclear deterrent arrangements in the region.[33] In a statement following the Chinese test, the US reaffirmed its security commitments to regional allies, 'even if Communist China should eventually develop an effective nuclear capability'.[34]

The impact of China's nuclear test was more serious in relation to India. Indian Prime Minister Jawaharlal Nehru was apprehensive about China's nuclear activities, particularly after the October 1962 war with China, but even more so following China's nuclear test in October 1964.[35] Throughout the 1960s and early 1970s, India actively pursued nuclear weapons development, while also seeking security guarantees to shield it from Chinese nuclear attack.[36] In 1974, India conducted a Peaceful Nuclear Explosion (PNE) but did not follow the PNE with an actual nuclear weapon test until 1998.

Essentially, although China's test did not lead to a cascade of proliferation, in major ways, the concerns that surrounded China's nuclearisation were enough to strengthen the non-proliferation model as the basis for nuclear order. In particular, the test influenced superpower thinking on nuclear order. As Seaborg and Loeb point out,

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[33] See Robert S. Lindquist, US Embassy in Taiwan, 'Comments re Effectiveness and Credibility of U.S. Nuclear Deterrent in Far East in Wake of Chinese Communist Nuclear Detonation', Confidential Airgram A-357, 27 October 1964, Nuclear Non-Proliferation Collection, No. NP01025, via DNSA; Campbell et al., *The Nuclear Tipping Point*, pp. 218-253, pp. 254-292 and pp. 293-316; and Charles Wolf, Jr., 'The Uses and Limitations of Nuclear Deterrence in Asia', recently declassified RAND report, August 1964.

[34] US Department of State, 'Statement by the President on Chinese Communist Detonation of Nuclear Devices', 16 October 1964, Records of Policy Planning Council, http://www.presidency.ucsb.edu/ws/index.php?pid=26615#axzz1ith58wFj [accessed 20 June 2011]

[35] India feared the extent of Sino-Pakistan military cooperation. In the 1965 Indo-Pakistan war China gave outspoken support for Pakistan. See Joyce Battle, *India and Pakistan: on the Nuclear Threshold*, National Security Archive Electronic Briefing Book No. 6, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB6/index.html [accessed 20 January 2010]

[36] Though in certain intelligence reports India had reported it would delay production of nuclear weapons based on its assessment of the Chinese nuclear threat. President Johnson had promised to aid any nation threatened by China, see US CIA, 'Indian Government Policy on Development of Nuclear Weapon, Classification Excised, Intelligence Information Cable 99143, 24 October 1964, Weapons of Mass Destruction Collection, No. WM00088; and Chester Bowles, 'Effect of Chinese Nuclear Tests on India's Desires to Speed Up Its Nuclear Program', Confidential Cable 02253, 10 February 1965, Nuclear Non-Proliferation Collection, No. NP01106, both via DNSA. Interestingly, the US was sympathetic to Japan and India's interest in nuclear weapons, but overt support would have complicated their stance in keeping West Germany non-nuclear. See Gilpatric et al., *Report to the President by the Committee on Nuclear Proliferation.*

following China's test, the US and USSR had pushed forward more firmly with treaties like the PTBT and NPT.[37] In addition, as Gavin argues, China featured prominently in the Gilpatric committee deliberations, which played an important role in driving forward the NPT, a pivotal aspect of nuclear order.[38] A key task of this committee was to predict how the Chinese nuclear test would influence global politics. In one report to the committee, it was argued that the 'Chinese communist nuclear explosion has reinforced the belief…that nuclear weapons are a distinguishing mark of a world leader, are essential to national security, and are feasible even with modest industrial resources'.[39] Beyond the Gilpatric committee, Garthoff counts five other bodies in the US tasked at that time with studying the implications of the Chinese nuclear explosion.[40] China's test also provided added incentives for other non-proliferation and arms control efforts, such as the US decision to establish the Arms Control and Disarmament Agency (ACDA) in the early 1960s; and missile defence activities in the 1960s, namely Nike and Sentinel in the US,[41] as well as the Galosh system in the USSR.[42] Indeed, in a 1967 contingency paper, US ABM initiatives were justified along the lines that they would 'decrease U.S. vulnerabilities to

[37] Seaborg and Loeb, *Stemming the Tide*, p. 117 and p. 121. See also Shaker, *The Nuclear Non-Proliferation Treaty*, pp. 90-91 and Keesing's Contemporary Archives, Vol. XIV, 1963-1964, p. 20372A.
[38] Gavin, 'Blasts from the past', pp. 108-117; and David Morse, US Arms Control and Disarmament Agency (ACDA), 'Non-Proliferation [Gilpatric Committee, Multilateral Force and Negotiations for Non-Proliferation Treaty]', Memo of Conversation, 6 July 1965, Nuclear Non-Proliferation Collection, No.NP01124, via DNSA.
[39] Gilpatric et al., *Report to the President by the Committee on Nuclear Proliferation*.
[40] Garthoff, *A Journey through the Cold War*, pp. 193-195. These included the Gilpatric Committee, the Thompson Committee (an inter-agency committee chaired by Ambassador Thompson), Johnson Committee (under Policy Planning Council auspices), Fisher Committee (chaired by ACDA deputy director Fisher), and an Ad-hoc Committee on the Chinese Communist Nuclear Detonation under an inter-departmental political-psychological working group chaired by Under-Secretary Harriman, and an internal JCS study on the military implications of China's nuclear tests.
[41] See US CIA Directorate of Intelligence. Office of Current Intelligence, Military Division, 'Assessment of the Chinese Communist Threat as Projected in the Army's Nike-X Deployment Study and DIA's Special Intelligence Supplement, 'Communist China, Nuclear Threat', Secret Memo, 3 November 1965, Weapons of Mass Destruction Collection, No. WM00108, via DNSA; and Malcolm W. Hoag, 'One American perspective on nuclear guarantees, proliferation and related alliance diplomacy', RAND Paper P-4547, 1971.
[42] Smoke, *National security and the nuclear dilemma*, pp. 116-119.

possible Chinese threats of attack and thereby enhance the credibility of our [US] commitments to Japan and other friendly nations'.[43]

Second, if China's test validated the need for a nuclear order and provided additional impetus for the superpower model for nuclear order, China's own statements also added to thinking on what should be contained within the components of that order. Beijing questioned the superpower model by highlighting its discriminatory and threatening nature, and it justified its detonation largely in ideological and strategic terms, in particular as a counter to threats from the US and Soviet Union.[44] According to the official statement following the test, 'China cannot remain idle in the face of ever-increasing nuclear threats from the United States. China is conducting nuclear tests under compulsion. In developing nuclear weapons, China's aim is to break the nuclear monopoly of the nuclear powers and eliminate nuclear weapons'.[45] Simply put, China claimed it had acted out of self-defence. Furthermore, China promoted its nuclearisation as an equaliser, emphasising that the detonation was a success for developing countries and in the interest of those Communist powers that had no nuclear deterrent. It was in this spirit that Beijing's test was apparently welcomed by states in Eastern Europe, South East Asia, and Africa.[46] China even advertised its nuclear weapons capability as a shield for non-nuclear

[43] Contingency Paper on the Arms Control Considerations of a U.S. ABM Deployment Decision, 25 August 1967, NSF, Country File USSR, Box 231, Folder: USSR-ABM Negotiations (II) 1/67-9/68, LBJ Library, in Gavin, 'Predicting proliferation', ft. 58, p. 26. See also US Senate Subcommittee on Arms Control, International Law and Organization of the Committee on Foreign Relations, 'ABM, MIRV, SALT and the Nuclear Arms Race, The ABM and U.S. Relations with China', 9 April 1970, statements by A. Doak Barnett, and Alice L. Hsieh, pp. 119-173, in which they argued not to develop ABM because of the provocative message it would send to China. There was also a debate in the US about whether ABM system might vindicate China's nuclear deterrent, see *FRUS*, Memo of a Conversation, 27 January 1967, Vol. XIV, p. 455.

[44] Chong-Pin Lin, *China's Nuclear Weapons Strategy, tradition within evolution* (Mass.: Lexington Press, 1988), pp.38-44; Li Jun-ting, 'Shi Zhongguo tingzhi yaoban de zhanlue xing jueze wei jinian Zhongguo hewuqi de dansheng er zuo' [Strategic Choice That Straightened the Back of China, Commemorating the Birth of Chinese Nuclear Weapons] *Dangdai Zhongguo shi yanjiu* [Contemporary China History Studies], Vol. 12, No. 2, February 2005, pp. 55-58; and B.W. Angentein, 'The Chinese and French programs for the development of national nuclear forces', *Orbis*, Vol. XI, No. 3, 1967, pp. 846-863.

[45] *Break the Nuclear Monopoly eliminate nuclear weapons* (Peking: Foreign Languages Press, 1965), pp. 1-5.

[46] *Foreign Affairs Reports*, 'World Reactions to the Chinese Nuclear Bomb', Vol. XIV, No.1, January 1965, p. 12; *Jiefangjun Bao (PLA Daily),* 'Zhongguo de chengjiu jiaqiangle beiyapo renmin de liliang'[China's

states within the Communist bloc. On 30 October 1964, Liu Shaoqi stated: 'all oppressed nations and peoples and all peace-loving countries and people have felt elated over the successful explosion of China's first atom bomb, as they hold the view that they, too, have nuclear weapons'.[47] Shane Maddock adds a racial/colonial dimension to this argument, highlighting how, following China's test, among developing nations 'there was a sense of pride that one of the [colonial peoples of the world] has been able to break what has hitherto been a monopoly of white nations'.[48]

Third, China's nuclear test eventually convinced the US of the need to bring China into the nuclear order. At first, Washington had marginalised Beijing and kept it out of the ENDC. In addition, the Partial Test Ban and the idea of a Fissile Material Cut-off Treaty were promoted by the US in part as measures to curtail China's nuclear potential. Following China's test, the US had clearly in place a campaign to downplay this event since it did not want the test to serve as an example for others.[49] However, as China's missile capabilities developed, there was a growing realisation in the US that China could not be isolated or ignored as in the past; it would have to be incorporated. [50] This

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achievements in strengthening the power of the oppressed people], 17 May 1965; 'Yuenan, Aerbaniya, Luomaniya, Sulian, Minzhu De, Bolan Guba deng shehui shuyi guojia dui wo dier he shiyan fanying' [States friendly to China, such as Indonesia, Albania and Vietnam, see Vietnam, Albania, Romania, Soviet Union, Democratic Germany, Poland and Socialist Cuba's response to our second nuclear test] File No.113-0041005, 29 May 1965; and 'Miandian, Niboer, Yilake, Riben, Laowo, Xilandeng yazhou guojia dui wo di er ci heshiyan fanying' [Myanmar, Nepal, Iraq, Japan, Laos, Iceland, and Asian countries reaction to our second nuclear test], File No. 113-00411-02, 15 May 1965, both from Chinese MFA.

[47] Quoted in Oran R. Young (b), 'Chinese Views on the Spread of Nuclear Weapons' in Morton H. Halperin, eds., *Sino-Soviet Relations and Arms Control* (Cambridge, Mass., 1967), pp. 31-32.

[48] Shane J. Maddock, *Nuclear apartheid: the quest for American atomic supremacy from World War II to the present* (Chapel Hill: University of North Carolina Press, 2010), p. 236.

[49] Dean Rusk, 'Further Guidance re:ChiCom Nuclear Atmospheric Test', Confidential Cable 698, 21 October 1964, Nuclear Non-Proliferation Collection, No. NP01015, via DNSA; and Robert Allen Aylward, US Embassy in Taiwan, 'Standing Committee Members Comment on the Communist Chinese Nuclear Explosion', Confidential Airgram A-463, 9 December 1964, Nuclear Non-Proliferation Collection, No. NP01066, via DNSA.

[50]US State Department air gram to embassy in India, 'Communist China's ICBM flight test program', 10 August 1967, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB26/06-01.htm [accessed 18 October 2010]; and US NSC Review Group, 'U.S. China Policy; Nuclear Planning Group Issues, Top Secret Minutes, 15 May 1969, Kissinger Transcripts Collection, No. KT00021, via DNSA. Gavin argues that the Chinese test strengthened the Johnson administration's commitment to South Vietnam since an American withdrawal might validate Chinese proliferation and push others like India and West Germany to go nuclear, see 'The

realisation had been apparent during the Gilpatric committee, but gained momentum during the Nixon administration, with US Secretary of State Henry Kissinger ordering a review of US nuclear policy in Asia in 1969,[51] and the creation of an inter-departmental China policy group in 1970.[52] Indeed, by 1971, Beijing had replaced Taiwan as a permanent member of the UN Security Council[53] and discussions in the US considered the idea of Chinese participation in a future Conference on Disarmament.[54]

In sum, China's nuclearisation had various implications for the emergence of global nuclear order. Above all, the challenges it posed for proliferation provided added urgency and pressure for the superpower model to emerge as the basis of nuclear order. In other words, China's test in 1964 had inadvertently helped promote the model to which it had been opposed, namely the superpower model driven by non-proliferation concerns. China's nuclearisation had additional implications for nuclear order: it validated that order by seeking legitimacy as a nuclear weapons state, but it also highlighted the discriminatory aspects of that order. Lastly, it led to recognition in the US that China would eventually have to be incorporated into nuclear order. Having explained the way that China's nuclearisation figured in the construction of the emergent nuclear order, I turn next to an exploration of China's contribution as a nuclear armed state to core elements of that order: arms control, non-proliferation, disarmament and deterrence, between 1964 and 1976.

1964 Gilpatric Committee and the Origins of America's Counterproliferation Policy', University of Texas, May 2003, http://web.mit.edu/ssp/seminars/wed_archives_03spring/gavin.htm [accessed 10 January 2010]

[51] Henry A. Kissinger, 'U.S. Nuclear Policy in Asia' Secret National Security Study Memorandum, NSSM 69, 14 July 1969, China and the U.S. Collection, No. CH00073, via DNSA.

[52] Winston Lord, 'China Policy Group', Memo, 10 November 1970, China and the US Collection No. CH00193, via DNSA.

[53] On the limited impact of China's UN seat on its arms control and disarmament policies in the 1970s, see Zhang Yongjin, *China in International Society since 1949: alienation and beyond* (Basingstoke: Macmillan, 1998), pp. 155-157.

[54] The Conference of Disarmament was established in 1979. See Samuel De Palma, US Department of State, 'Implications for U.S. Policy of the Participation of the People's Republic of China in Multilateral Diplomacy', 3 December 1971, China and the U.S. Collection, No. CH00230, via DNSA; and Memo of conversation between Huang Hua, China's Ambassador to UN and US NSA advisor Kissinger, 8 September 1972, Kissinger Transcripts Collection, No. KT00552, via DNSA.

Chinese Arms Control Behaviour

Maoist China might have accepted the inevitability of the superpower model as the basis of global nuclear order in the mid to late 1960s but it remained ostensibly opposed and critical of that model, regarding arms control as 'nuclear collusion' [55] and an 'anti-China US Soviet nuclear military alliance' to constrain its nuclear weapons development.[56] China consequently criticized a plethora of bilateral arms control agreements negotiated between the US and USSR during the 1960s and early 1970s, such as the SALT and ABM treaties.[57] Beijing also focused on the discriminatory and secret nature of the 1967 Glassboro talks between the superpowers.[58] Missile defence programmes represented another area where Beijing believed the superpowers were colluding against China.[59] China singled out the 1973 Prevention of Nuclear War Treaty[60] and the 1972 US-Soviet Standing Consultative Committee as particularly problematic given provisions for the sharing of Soviet and US military intelligence related to strategic forces.[61]

Only in the early to mid 1970s did China begin to gradually abandon the nuclear collusion rhetoric. However, China simply replaced this rhetoric with the view that, despite

[55] Michael Pillsbury, 'Salt on the dragon: Chinese views of the Soviet-American strategic balance', RAND Report P-5457, April 1975, China and the US Collection, No. CH00342, via DNSA, p.15; *Renmin Ribao*, 'Meisu hemou de he pianju' [US-Soviet nuclear fraud conspiracy], 13 June 1968; *Jiefangjun Bao,* 'He pianju de you yici da baolu', [Another great exposure of the nuclear scam], 17 October 1964, and *Jiefangjun Bao*, 'Meisu jiajin goujie gao fangzhi he kuosan yinmou', [The Soviet Union stepped up to collaborate in a conspiracy to prevent nuclear proliferation] 4 November 1966.

[56] *Renmin Ribao*, 'A grave step in forming a US-Soviet Counter-Revolutionary nuclear military alliance', reprinted in *Peking Review*, 13 March 1968, p. 31; and *Renmin Ribao*, 'A Nuclear fraud jointly hatched by the US and the Soviet Union', reprinted in *Peking Review*, 13 June 1968, p. 17.

[57] Beijing's criticism of the ABM is surprising as the treaty benefited China. See Pillsbury, 'Salt on the dragon', p. 63.

[58] Hoover Institute, *Communist China & arms control: a contingency study, 1967-1976* (California: Hoover Institute, 1968). John Newhouse, *Cold dawn: The story of SALT* (London: Pergamon-Brassey's International Defense, 1989), pp. 75-80.

[59] *Renmin Ribao,* The pitiful struggle of U.S. nuclear overlord', 27 October 1967, reprinted in *Peking Review*, pp. 36-39.

[60] Hsiang Ming, 'Are they preventing nuclear war or contending for nuclear superiority? *Peking Review*, 16 November 1973.

[61] Pillsbury, 'Salt on the dragon', p. 72.

détente, the superpowers had lost interest in non-proliferation and arms control,[62] and were instead engaged in a renewed and competitive arms race for nuclear superiority, pointing to disagreements between the superpowers over new nuclear related technology such as multiple warheads, cruise missiles and ICBMs.[63] In this vein, Chinese considered SALT a 'new fraud in the Soviet-US nuclear race'.[64]

Chinese Non-Proliferation Behaviour

In terms of non-proliferation, China continued to reject agreements such as the NPT. On 13 June 1968, the Chinese state newspaper, *Renmin Ribao,* condemned the NPT as an 'indenture imposed upon non-nuclear states' and 'a big fraud'.[65] It set up, in its view, 'a false sense of security'.[66] For Zhou Enlai, the NPT was promoted by the superpowers solely to 'maintain [their] nuclear monopoly'.[67]

Despite the continued rejection of the NPT, during this period China contributed to the non-proliferation pillar of nuclear order in two important respects. First, shortly after its nuclear test, China distanced itself from the idea of socialist proliferation, abandoning it altogether by the late 1960s. In 1965, China's Foreign Minister Chen Yi declared it

[62] Nixon's disinterest in non-proliferation is noted by Gavin, 'Blasts from the Past', p. 131. Bull also seemed to agree, writing in the 1970s that the superpowers were losing responsibility as nuclear trustees in 'The great irresponsibles? The United States, the Soviet Union, and world order', *International Journal*, 1979-1980, pp. 437-447.

[63] *Jiefangjun Bao*, 'Liang ge chaoji daguo jiajin jinxing he junbei jingsai' [Two superpower nuclear arms race intensified] 27 August 1973; *Jiefangjun Bao*, 'Sumei liang be jixu jiajin he kuojun jing' [US-Soviet nuclear arms race to continue to intensify], 31 January 1974; Pillsbury, 'Salt on the dragon', pp. 29-30; and Chang Lin, 'Talk of detente cannot cover-up fierce contention', *Peking Review*, 20 August 1974, p. 56.

[64] *Peking Review*, 'New fraud in the Soviet-US nuclear race', 24 January 1975, p. 27.

[65] *Renmin Ribao*, 'He pianju jiu buliao Mei di su xiu de ming' [Nuclear fraud could not save US imperialism], 3 September 1967.

[66] Jonathan D. Pollack, 'Chinese attitudes towards nuclear weapons, 1964-1969', *The China Quarterly*, No. 50, 1972, pp.244-271; and Halperin and Perkins, *Communist China and Arms Control*, p. 129.

[67] *Renmin Ribao*, 'Premier Zhou Enlai greats the twelfth world conference against atomic and hydrogen bombs', August 1966, reprinted in *Peking Review*, p.15. Interestingly, the Chinese did not subject the NPT to the same level of assault as the PTBT, perhaps because the NPT actually afforded China legitimacy as a nuclear weapons state, see M. Malik, 'China and the Nuclear Non-Proliferation Regime', *Contemporary Southeast Asia*, Vol. 22, No. 3, 2000, pp. 445-478,

'unrealistic to ask China to help make atomic bombs'.[68] A year later, China offered a more cautious argument with respect to proliferation: 'it is the business of every country in the world to decide for itself whether to develop nuclear weapons or not…nobody is entitled to deprive another of the right to have nuclear weapons'.[69] In 1967, President Nasser of Egypt reportedly requested nuclear aid but Zhou Enlai refused, stating: 'if the Egyptians wanted to step into the atomic field they would have to do it themselves. This was the way the Chinese did it and it was best'.[70] Later, in 1969, Zhou Enlai reportedly refused a request by Libya to purchase an atomic device.[71]

Secondly, China supported the idea of nuclear weapons free zones in South Asia, the Middle East and Latin America. [72] In 1974, China went so far as to ratify Protocol 2 of the Tlatelolco Treaty providing legally-binding negative security assurances to the treaty's parties.[73] Previously, in 1972, the Chinese Foreign Minister declared that: 'China will never use or threaten to use nuclear weapons against non-nuclear Latin American countries and the Latin American nuclear-weapon-free zone; nor will China test, manufacture, produce, stockpile, install or deploy nuclear weapons in these countries'.[74] In 1973, at a UN Security Council meeting in Panama, Chinese representative Huang Hua added that:

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[68]Evan Medeiros, *Reluctant Restraint, the Evolution of China's Nonproliferation Policies and Practices, 1980-2004*, (Stanford: Stanford University Press, 2007), p.35.

[69] *Peking Review*, 18 November 1966, pp. 34-35, both quoted in R.L.M. Pitil, 'China and nuclear proliferation', *China Report*, Vol. 4, 1968, pp.10-11.

[70] Michael Yahuda, *China's Role in World Affairs* (London: Croom Helm, 1978), pp.143-144, ft. 12; Shaker, *The Nuclear Non-Proliferation Treaty*, p. 308; and Mohamed Hassanein Heikal, *The Cairo Documents. The inside story of Nasser and his relationship with world leaders, rebels, and statesmen* (New York: Doubleday, 1973), pp. 304-305 and 312-313.

[71] John Wright, *Libya: A Modern History* (London: Croom Helm, 1982), p. 204.

[72] *Renmin Ribao*, 'Wo guo zhichi jianli lamei wu he qu de lichang shoudao Lamei guojia huanying wo guo daibiao chen chu zai lian da di yi weiyuanhui xuandu jipengfei waizhang de sheng' [China supports the establishment of the nuclear-free zone in Latin America] 20 November 1972.

[73] Walter C. Clemens, Jr., 'China', in Richard Dean Burns, *Encyclopedia of Arms Control and Disarmament*, Vol. 1, p. 62.

[74]Letter from Chinese Foreign Minister Chi Peng-fei to Mexican Ambassador to China Eugenio Anguiano, 14 November 1972 http://www.nti.org/db/china/engdocs/mfa1172.htm [accessed 2 April 2010]

'The Chinese Government attaches great importance to and supports the efforts of the Latin American countries for the denuclearization of Latin America'.[75]

However, despite abandoning socialist proliferation and ratification of the Tlatelolco Treaty, some aspects of China's covert nuclear behaviour began to reflect a pro-proliferation stance, challenging the NPT. Perhaps China was reacting to possible nuclear weapons development in India, Taiwan and Japan.[76] Indeed, China had long been concerned about Indian nuclear activities.[77] During the late 1960s, China offered conventional military cooperation to Pakistan.[78] Later, while China officially responded to India's PNE in 1974[79] with aloofness, stating that it was of no military significance,[80] Garver reports that following the PNE China exchanged nuclear scientists with Pakistan and, in 1976, both sides signed a secret agreement to formalise nuclear cooperation.[81] While the exact scope of this agreement remains unknown, analysts such as Medeiros suspect that China's nuclear cooperation with Pakistan in the 1970s did not extend to direct assistance in the nuclear weapons field.[82] Beyond Pakistan, China continued to aid

[75] *Peking Review*, 23 March 1973, p. 10

[76] In 1965, Halperin argued proliferation was desirable for China because it would reduce US and Soviet influence in India and Japan. See Morton Halperin, *China and Nuclear Proliferation* (Chicago: University of Chicago Press, 1966), pp. 35-42.

[77] *Renmin Ribao,* 'Meiguo goujie Yindu zai yazhou jiajin tuixing heezha zhengce' [Collaboration in Asia and the United States has been stepped up with the implementation of India's policy of nuclear blackmail] 30 December 1964.

[78] 'For Over Fifteen Years, Beijing Rebuffed U.S. Queries on Chinese Aid to Pakistani Nuclear Program', *National Security Archive*, 5 March 2004, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB114/press.htm [accessed 27 January 2010].

[79] US National Security Council, Interdepartmental Group for Near East and South Asia, Acting Chairman Sidney Sober, 'Indian Nuclear Development--NSSM 156', 31 May 1974, Presidential Directives Part II Collection, No. PR01076, via DNSA.

[80] Percovich, *India's Nuclear Bomb,* pp. 196-197; and Shaker, *The Nuclear Non-Proliferation Treaty,* pp. 820-821. On the negative impact of the PNE in terms of proliferation, also see Shaker, *The Nuclear Non-Proliferation Treaty*, pp. 828-829.

[81] Zulfikar Ali Bhutto, Pakistan's Prime Minister from 1973 to 1977, has referred in a cryptic fashion to this agreement. See John W. Garver, *Protracted Contest, Sino-Indian Rivalry in the Twentieth Century* (Seattle: University of Washington Press, 2001), pp. 329-330. See also Percovich, *India's Nuclear Bomb*, p.187 and Ming Zhang, *China's Changing Nuclear Posture, reactions to the South Asian nuclear tests* (Washington: Carnegie Endowment for Peace, 1999), pp. 9-10.

[82] Medeiros, *Reluctant Restraint*, pp. 39-40.

North Korea in the civilian nuclear field,[83] and in April 1974, reportedly agreed to train North Korean nuclear scientists and engineers.[84] However, it is important to note that this Chinese nuclear behaviour did not come to light until much later, thus its significance for nuclear order only became apparent once it became clear that these states were bent on acquiring their own nuclear arsenal.

Chinese Disarmament Behaviour

Officially, throughout this period China continued to support, in principle, nuclear disarmament, calling for a world conference on this topic shortly after its 1964 test.[85] However, China distinguished itself from the superpowers by attaching new conditions for disarmament. First, disarmament would be conditional upon a NFU agreement between nuclear weapons states.[86] By adopting this approach China was perhaps seeking to promote the image of a responsible state and appease wider Communist and non-aligned interests. Yet, given China's lack of second strike capabilities, and the fact that China was the only nuclear armed state at the time with a NFU policy, using NFU this way made practical sense. Moreover, China's position suggested that it was delaying progress on disarmament since the superpowers were unlikely to support a NFU deal.[87]

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[83] China and North Korea signed a nuclear cooperation agreement in 1959. See Balazs Szalontai and Sergey Radchenko, 'North Korea's efforts to acquire nuclear technology and nuclear weapons: evidence from Russian and Hungarian archives', No.53, CWIHP, August 2006 http://www.coldwar.hu/html/en/starting%20page/WP53_web_final.pdf [accessed 1 May 2010]

[84] This could have been for peaceful uses of nuclear energy. See Joseph S. Bermudez, Jr., 'North Korea's Nuclear Programme', *Jane's Intelligence Review*, Vol. 3, No. 9, September 1991, p. 408.

[85] *Renmin Ribao*, 'Dapo he longduan xiaomie hewuqi' [Elimination of nuclear weapons to break the nuclear monopoly] 2 October 1964; and *Renmin Ribao*, 'Chen Chu zai zhengwei hui huiyi shang chongshen Zhongguo zai he caijun wenti shang de yuanze lichang Zhongguo zhengfu yuguan zhuzhang quanmian jinzhi he chedi xiaohui hewuqi' [Chen Chu, Political Commissar of the Council meeting on nuclear disarmament, China's principled stance on the issue of the Chinese government has always advocated the complete prohibition and thorough destruction of nuclear weapon] 12 December 1971.

[86] NFU in a small way positively influenced ideas of non-use and non-proliferation, thus in this sense China's policy was consistent with the principles of the emerging global nuclear order.

[87] NFU presented a challenge for the superpowers since deterrence rested on MAD, a condition of deterrence bolstered by the principle of first use. The US was also sceptical that China would hold to a NFU position in actual conflict. See Richard H. Ullman, 'No First Use of Nuclear Weapons', *Foreign Affairs*, July 1972.

Its second condition was to call for more inclusive disarmament talks outside of the United Nations where it was not yet represented in the mid to late 1960s.[88] Indeed, according to Zhou Enlai, any nuclear agreements made at the UN would not be binding on China.[89] A third position began to take shape in August 1971, when Beijing rejected a Soviet proposal for a five-power conference between the US, USSR, China, UK and France to discuss disarmament. On 24 November 1971, a day before the People's Republic of China entered the UN and assumed the China seat on the UN Security Council, Qiao Guanhua, head of the Chinese delegation to the UN General Assembly, clarified China's position by calling for the superpowers to take the lead in disarmament talks, placing the emphasis squarely on the US and USSR to uphold the model for nuclear order they had promoted.[90] This was an important departure from China's past insistence on an all-inclusive approach to such negotiations.

In summary, in terms of arms control, non-proliferation and disarmament, between 1964 and 1976, Maoist China largely remained at the margins of global nuclear order, outside major agreements such as the NPT and organizations like the IAEA. China arguably weakened the emergent global nuclear order by remaining critical of arms control and non-proliferation treaties such as the NPT, emphasising the discriminatory nature of these treaties. China's rejection of the NPT offered additional rationale for non-nuclear weapon state criticism of this treaty as hierarchical and unfair. Beijing's description of the PTBT and SALT as nuclear collusion added to this. In addition, Halperin and Perkins

[88] Wu Yun, 'China's policies towards arms control and disarmament, from passive responding to active leading', *Pacific Review*, Vol. 9, No. 4, 1996, pp. 580-581.
[89] Morton H. Halperin and Dwight H. Perkins, *Communist China and Arms Control* (Cambridge: Harvard University Press, 1965), p. 177.
[90] *Jiefangjun Bao*, 'Qiao Guanhua tuan zhang zai lian da quanti huiyi shang zaici fayan yanzheng bochi Sulian daibiao malike dui Zhongguo de gongji' [Qiao Guanhua, head of the UN General Assembly plenary meeting categorically rejects the arguments on behalf of the Soviet Union] 29 November 1971.

contend that China was not serious about disarmament, which it had tied to NFU.[91] According to their assessment, China never expected its disarmament proposals to materialise, so there was no risk to its nuclear deterrent. However, one should not overlook China's more positive actions during this period. For instance, Beijing abandoned socialist proliferation and by the mid 1970s, had dampened down its nuclear collusion rhetoric. Furthermore, China's declared support for nuclear disarmament, if only in principle, contributed to, rather than undermined, nuclear order. China's policy of NFU also had a potential positive impact on emerging nuclear order. At that time, China was the only nuclear weapons state with such a policy, but the fact that major nuclear powers eschewed NFU limited the significance of this aspect of Chinese nuclear behaviour on nuclear order.

Nuclear Deterrence, Enhancing Levels of Technology

Despite a public rejection of nuclear deterrence, the fourth core element of nuclear order, throughout the 1960s and 1970s, China privately focused on stabilising its nuclear deterrent. During this period, China's nuclear arsenal was extremely vulnerable. According to US intelligence, China would not represent a credible threat to the US until 1980.[92] Indeed, the Chinese were forced during this period to emphasize conventional rather than nuclear deterrence in operational military policy.[93] Added to this, fears of attack persisted, particularly during the 1969 Sino-Soviet war, [94] when Moscow almost launched an attack

[91] Halperin and Perkins, *Communist China and Arms Control*.
[92] Clark M. Clifford, US DOD, 'Strategic Offensive and Defensive Forces', Classification Unknown, Memo, 9 January 1969, U.S. Nuclear History Collection, No.NH00476, via DNSA.
[93] See statements by Wang Deli (Institute of Applied Physics and Computational Math, Beijing), Su Hao (Foreign Affairs College, Beijing), Professor Li Bin (Tsinghua University, Beijing), Zhang Xiaoming (Peking University, Beijing), Zhang Qingmin (Foreign Affairs College) and Shen Zhihua (Beijing University) in Lyle J. Goldstein, 'When China was a 'Rogue State': the impact of China's nuclear weapons programme on US-China relations during the 1960s', *Journal of Contemporary China*, Vol. 12 , No. 37, 2003, pp. 758-760.
[94] William Burr, 'The Sino-Soviet Border Conflict, 1969: U.S. Reactions and Diplomatic Manoeuvres', National Security Archives Electronic Briefing Book, 12 June 2001, http://www.gwu.edu/~nsarchive/NSAEBB/NSAEBB49/index2.html [accessed 27 January 2001]; Raymond Garthoff, *Détente and Confrontation, American-Soviet Relations from Nixon to Reagan* (Washington DC: The Brookings Institute, 1994), pp. 237-241; Geoffrey Hudson, 'Paper Tigers and nuclear teeth', *The China*

on Chinese nuclear facilities.[95] To this day, the Chinese still do not know why the Soviets blinked. In any event, this experience, perhaps the closest China has ever come to the brink of a potential nuclear exchange, reinforced the need for a survivable second strike force.

In the face of these challenges to its security, China chose, as in the past, to downplay the significance of nuclear weapons. It decided it would not seek parity with the superpowers, only a minimal deterrent capability.[96] The declared policy of NFU was important in this regard, indicating that the Chinese would not seek the condition of mutual assured destruction that defined the superpower nuclear relationship.[97] Instead, China's nuclear force development would be carried out according to minimalist principles, as outlined in the mid 1960s mantra: 'build a few weapons, keep the numbers small [*and*] make the quality high'.[98]

Despite this important doctrinal decision, it still sought to make its deterrent credible. To counter the external threats to China's security as well as the gaps in its nuclear arsenal, a 'catch-up' policy to improve the survivability and credibility of the

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Quarterly, No. 39, 1969, pp. 64-75; Lowell Dittmer, *Sino-Soviet normalisation and its international implications, 1945*-1990 (Seattle: University of Washington, 1992), pp. 191-192; Gerald Segal, *Defending China* (Oxford: Oxford University Press, 1985), pp. 180-90; *Associated Press*, 'Kissinger secretly offered China help against Soviets', 10 January 1999.

[95]This is an under-researched aspect of China's nuclear past, frustrated by a lack of access to Soviet archives. Of the limited literature on this subject, see Holloway, 'Assessing China's nuclear policy', unpublished paper provided to author, pp.18-30; Lyle J. Goldstein, 'Do Nascent WMD Arsenals Deter? The Sino-Soviet Crisis of 1969', *Political Science Quarterly*, Vol. 118, No.1, 2003, pp. 53-79; and Michael S. Gerson, *The Sino-Soviet Border Conflict: Deterrence, Escalation, and the Threat of Nuclear War in 1969* (Alexandria, Va.: Center for Naval Analyses, 2010).

[96] Given the weak status of China's deterrent, the nature of its deterrent relationship with either of the superpowers was unclear during this period. Hedley Bull contended that 'in the course of the next decade a strategic nuclear stalemate or relationship of mutual deterrence is likely to develop between China and the United States, and between China and the Soviet Union', in 'The new balance of power in Asia and the Pacific', *Foreign Affairs*, July 1971, p. 673. The PLA also allegedly considered tactical options, see Harry Gelber, *Nuclear Weapons and Chinese Policy*, Adelphi Paper No. 99, (London: International Institute for Strategic Studies, 1973), p. 19.

[97]The US could not adopt NFU since it would undermine the extended deterrent it offers to Japan, South Korea and Taiwan.

[98] Xue Litai, 'The Evolution of China's Nuclear Strategy' in John Hopkins and Hu Weixing, *Strategic Views from the Second Tier: the nuclear weapons policies of France, Britain and China (*New Brunswick: Transaction Press, 1995), p. 171.

deterrent was needed.[99] As Mao stated on 28 December 1968, 'we cannot just take the beaten track traversed by other countries in the development of technology and trail behind them at a snail's pace'.[100] Within six months of the first test, in March 1965, the Eight-Year Plan for the Development of Rocket Technology (including the long-range missile, DF-5, capable of reaching US targets) was adopted.[101] A year later, China's strategic nuclear force, the Second Artillery Corps (SAC) (*di er paobing budui* 第二炮兵部队) was established within the PLA.[102] In addition, China conducted 21 nuclear tests between 1964 and 1976 leading to impressive developments in thermonuclear and hydrogen capabilities.[103] In 1966, China fired its first guided missile capable of carrying a nuclear warhead, and by 1967 it had successfully tested a thermonuclear device. [104]

In order to diminish the threat these developments might have been seen to pose to global nuclear order, the Chinese alleged its nuclear tests were positive contributions to world peace, increasing the prospect of disarmament.[105] According to comments in the *Peking Review*, the tests were a 'positive factor supporting all people opposing the nuclear monopoly, nuclear threats and joint schemes of the US imperialists and the Khruschevian revisionists'. [106] They downplayed the significance of these capabilities, stating in an

[99] Lin, *China's Nuclear Weapons Strategy,* pp.50-62.
[100] Quoted in Pollack, 'Chinese Attitudes towards Nuclear Weapons, 1964-9', p. 253, ft. 17.
[101] John W. Lewis and Xue Litai, 'Strategic Weapons and Chinese Power: the formative years' *China Quarterly*, No. 112, December 1987, pp. 571-554.
[102] This force is a necessary institutional body for any nuclear weapons power, increasing effective command and control. See Yang Guoliang and Sui Yongju, 'Build a truly proficient strategic missile force—marking the 30th anniversary of the founding of the 2nd artillery corps', in *Renmin Ribao*, 5 August 1996, FBIS-CHI-96-167; *Xinhua*, 'PRC: development of second artillery corps', 7 July 1997, FBIS-CHI-96-137; and Xu Zuzhi, 'Background of China's Strategic Missile Unit', *Beijing Zhongguo Xinwen*, 1 October 1999, FBIS-FTS19991002000093.
[103] On these tests, see Thomas C. Reed, 'The Chinese nuclear tests, 1964-1996', *Physics Today*, September 2008, p. 47; and *China Today: Nuclear Industry*, JPRS-CST-88-008, 26 April 1988, pp. 35-44.
[104] Xiaoping Yang, Robert North and Carl Romney, 'CMR Nuclear Explosion Database (Revision 3): CMR Technical Report CMR-00/16', August 2000; and NTI China test list, http://www.nti.org/db/china/testlist.htm [accessed 12 April 2009]
[105] Ralph Powell, 'China's bomb: exploitation and reactions, risks of nuclear proliferation', *Foreign Affairs,* Vol. 43, No.4, 1965, pp. 617-625.
[106] A reprint of *Renmin Ribao* comments in *Peking Review*, No.21, 20 May 1966.

official communiqué following the 1967 thermonuclear test that 'Atom bombs, guided missiles, and hydrogen bombs, all in all, are nothing much to speak of'.[107]

Interestingly, at the domestic level, despite upheaval during the Great Proletarian Cultural Revolution the overall plan to establish a credible deterrent remained in place.[108] At a technical level, it is believed that the Cultural Revolution increased demands on scientists working on the nuclear programme to deliver results.[109] This pressure possibly contributed to China becoming a thermonuclear power in world-record time by 1967.[110] In other areas, this pressure led to a selective focus on the ICBM rather than SLBM programme. Hymans argues that this approach worked because the ICBM project was sufficiently advanced in 1966 to withstand such intense pressure. This was not the case for China's SLBM programme, which was operating at a slower pace and was seriously derailed.[111] Overall, the technical limits and focus imposed by this event may have aided China's quest for a limited nuclear deterrent.[112] Elsewhere, the Cultural Revolution did result in the politicisation of nuclear organizations and figures, notably the National Defense Scientific and Technical Commission, and General Nie Rongzhen.[113] However,

[107] Quoted in Lewis and Xue, *China Builds the Bomb*, p. 210 and originally published in *Jiefangjun Bao (PLA Daily*), 'A magnificent victory for Mao Tse-tung's thought', 18 June 1967.

[108] There exists a scarcity of sources on this period of Chinese history. Most of the sources used here were taken from the USC Cultural Revolution Database at the Chinese University of Hong Kong.

[109] Charles H. Murphy, 'Mainland China's evolving nuclear deterrent', *The Bulletin of Atomic Scientists*, January 1972, p. 29; NIE 13-8-67, 3 August 1967, 'Communist China's Strategic Weapons Program', p.13, in *Tracking the Dragon: National Intelligence Estimates on China during the Era of Mao;* and Michael Minor, 'China's nuclear development program', *Asian Survey*, Vol. 16, No.6, June 1976, pp. 573-574.

[110] Compared to: US (86 months), USSR (75 months), UK (66 months) and France (105 months).

[111] Jacques Hymans, 'How Did China's Nuclear Weapons Project Succeed?', paper presented to the International Studies Association (ISA) annual conference in New Orleans, USA, on 18 February 2010, pp. 27-29. China's SLBM project was set for completion by 1967 but was ultimately not completed until 1988.The ICBM programme should have been completed by 1972 but was not completed until 1981. See John Lewis and Xue Litai, *China's Strategic Seapower: the politics of force modernization in the nuclear age* (Stanford: Stanford University Press, 1994), pp.5-32.

[112] This supports US intelligence reports at the time, such as US Defense Intelligence Agency, 'Soviet and People's Republic of China Nuclear Weapons Employment Policy and Strategy', TCS-654775-72, March 1972, No. CH00245, via DNSA.

[113] Lewis and Xue, China *Builds the Bomb*, pp. 203-206; and Harlan W. Jencks, 'The Chinese 'Military-Industrial Complex' and Defense Modernization', *Asian Survey* Vol. 20, No. 10 (1980), p. 983. According to Mark Stokes, in 1967, nuclear weapons complexes in Qinghai and Xinjiang were targeted by rival Red

there were efforts to safeguard the programme. In 1967, the Military Affairs Committee announced that the Cultural Revolution should only have a limited impact on the defence sector and Zhou Enlai set into motion efforts to secure key nuclear complexes and personnel.[114]

In sum, by the mid 1970s, Maoist China had gradually retreated from stances that directly challenged core aspects of nuclear order so as to focus on building a reliable nuclear deterrent. China toned-down its rhetoric on arms control, and supported in principle disarmament and non-proliferation by officially abandoning socialist proliferation, as well as indicating its support for nuclear weapons free zones in many parts of the world. Elsewhere, its covert behaviour in support of Pakistan and North Korea represented a challenge to non-proliferation but apparently had little impact on others' perceptions of its role at that time.

Understanding Chinese Engagement

In the immediate post-detonation period, slight changes occurred in China's positions on arms control, non-proliferation, disarmament and deterrence. Of these changes, the decision to tone-down Chinese rhetoric on superpower arms control and abandon the socialist proliferation idea reflect an important change in the external environment: an emerging nuclear order based on the superpower model. With the success of the superpower model, it was arguably now pointless to promote efforts such as socialist proliferation. As Wu Yun argues, by 1976 China had even 'lost interest' in the arms control and disarmament process.[115]

Guard groups. See Stokes, *China's Nuclear Warhead Storage and Handling System*, Project 2049 Institute, 12 March 2010, p.4.

[114]Central Military Commission, 'Zhongyang junwei, junwei wenge guanyu chongji paobing lingdao jiguan de wenjian', [Document of the CMC and the CMC CRG concerning the attack on the leading organs of the PLA Artillery Forces] 26 June 1967, Document No. 1/606, via USC. On the protection of key scientists, see Iris Chang, *Thread of the Silkworm* (Oxford: Basic Books, 1995), pp. 250-4.

[115] Wu, 'China's policies towards arms control and disarmament', pp. 579.

Security concerns also offer explanatory light on these changes in Chinese positions. Although China diminished the level of its rhetoric on arms control, it still remained opposed to the PTBT –a position that makes sense in security terms since signature of the latter would have weakened China's future nuclear capabilities.[116] Security considerations also explain China's covert nuclear cooperation activities during this period, especially in reference to Pakistan and Beijing's desire to maintain a strategic balance on the Indian subcontinent. Moreover, Pakistan had been loyal to China during the 1960s when Beijing faced an unprecedented level of international isolation, and later played a constructive role in the US-China rapprochement process.[117] In terms of regional security, support for North Korea would act as a counter to any Japanese and South Korean interest in obtaining nuclear capabilities. Elsewhere, China's real focus during this period, namely building a secure and credible nuclear deterrent, highlights the significance of security concerns. China faced a real threat of attack by the USSR during the border war in 1969.[118] Security concerns explain also why China abandoned socialist proliferation. As a nascent nuclear power, China needed to focus on its own nuclear weapons programme. Powell argues that it would have been risky for China to consider helping others until it had secured a credible retaliatory and delivery capability.[119] Moreover, at a technological level, the socialist proliferation model was unrealistic and impractical. China could not transfer technologies that it had not yet mastered itself.

Among domestic variables were considerations of image, although image has both domestic and global consequences. Nuclear weapons were considered by the Chinese as important symbols of economic and technological development. They were also perceived

[116] The same cannot be said for the NPT and ABM. These treaties were branded discriminatory by China and served political ends. See Halperin and Perkins, *Communist China and Arms Control*, pp. 105-116.
[117] See Rosemary Foot and Andrew Walter, *China, the United States, and Global Order* (Cambridge: Cambridge University Press, 2011), p. 146, ft. 14.
[118] According to US intelligence, the USSR also considered nuclear attacks after China's first nuclear test.
[119] Ralph Powell, 'Maoist Military Doctrines', *Asian Survey*, Vol. 8, No.4, 1964, pp. 239-262.

in Beijing as crucial in improving China's legitimacy and prestige both domestically, regionally and internationally. As a nuclear armed state, China endeavoured to justify its decision to test a nuclear device and establish that it would be a special kind of nuclear weapons state: through NFU it hoped to show non-nuclear states that it did not represent a threat and that, for it, nuclear weapons were predominantly a political rather than strategic weapon. In this vein, China promoted nuclear disarmament, nuclear free zones in Africa, Latin America and the Middle East, as well as its abandonment of socialist proliferation. As Hu contends, Beijing sought to be seen as a legitimate nuclear armed state, as well as a champion of non-nuclear and developing states in a discriminatory nuclear order. [120] In addition, by abandoning socialist proliferation, China perhaps wanted to preserve its special status and identity as a nuclear power, as fewer nuclear-armed states arguably made this capability more unique and prestigious. As Zhou Enlai stated in a Central Military Commission meeting on 21 May 1965, after its nuclear detonation, China's 'prestige in the world has risen'. [121] Indeed, more generally, China's nuclear tests performed an important political and strategic function, as each successful test, particularly the thermonuclear test on 17 June 1967, afforded China greater recognition on the international stage. [122]

Conclusion

In this chapter, Maoist China's behaviour as a new nuclear weapons state in the post detonation period between 1964 and 1976 has been assessed in two ways: first in terms of the immediate impact of China's test in 1964 on emerging nuclear order, and

[120] Jason Hu, *Arms Control Policy of the People's Republic of China, 1949-1978*, DPhil Thesis, Oxford University, 1984, p. 212.
[121] Zhou Enlai, speech at the War Planning Meeting of the Central Military Commission, *CWIHP*, 21 May 1965.
[122] The number of states recognising China increased sharply just before and after 1964. See Clemens, 'Chinese nuclear tests: trends and portents', p. 121.

secondly, via China's subsequent engagement with core elements of that order as a nuclear-armed state.

During this period, the superpower model, identified in embryonic form in chapter one, eventually emerged as the basis for global nuclear order. China's nuclearisation played an important role in this process, influencing the perceptions of others, especially the US, regarding what needed to be done as a result of China's nuclear test. More concretely, the challenges China's test posed for proliferation -- in particular that it would lead to a cascade of new nuclear weapons states -- provided added urgency and pressure for the superpower model to emerge as the basis of nuclear order. In the end, China's test did not have the feared cascade effect. However, China's nuclearisation had additional implications for nuclear order: it both validated that order by seeking legitimacy as a nuclear weapons state, and questioned the order, highlighting the discrimination within it. Lastly, it led to recognition, especially in the US, that China would have to be incorporated into nuclear order.

In the late 1960s and mid 1970s, China gradually began to retreat from the process of shaping nuclear order. China abandoned socialist proliferation when the superpower model began to take deeper effect. Maoist China's nuclear behaviour then became contradictory, affected by the uncertain strategic environment of the time and the nascent stage of its own nuclear weapons development. On the one hand, China saw important strategic value in promoting, at a declaratory level, aspects of emerging nuclear order, such as disarmament, and had openly abandoned, at least in rhetoric, socialist proliferation. China also constrained its rhetoric on superpower arms control. On the other hand, China provided covert nuclear/conventional assistance to Pakistan and North Korea- though this had little impact on nuclear order at that time. Essentially, China's main focus was elsewhere: on deterrence so as to enhance the credibility of its own nuclear arsenal. As a

nascent nuclear weapons state, and in order to increase its security, this focus was unsurprising.

Ultimately and somewhat ironically, as a new nuclear weapons state, Maoist China, driven largely by security and image concerns, inadvertently helped facilitate the emergence of a model for global nuclear order to which it had originally been ostensibly opposed. How China in the immediate post Mao period engaged with the global nuclear order it helped to create is the focus of the next chapter.

Chapter Four
Post-Mao China engages with nuclear order, 1976-89

This chapter explores China's engagement with global nuclear order between 1976 and 1989. Particular emphasis will be placed on how China, in the post-Mao period of reform and opening up, contributed, either directly or indirectly, to the consolidation of nuclear order. The chapter is divided into three sections. The first section outlines global nuclear developments and the status of nuclear order in the late 1970s and early 1980s. The second section focuses on defence modernization and internal debates among Chinese strategists, in particular the impact of these on the formation of China's first nuclear strategy. The third section evaluates China's cautious and contradictory engagement with the arms control, non-proliferation and disarmament pillars of global nuclear order, highlighting Beijing's decision in 1980 to join, for the first time, a major institution in the global nuclear order, the Conference on Disarmament (CD); as well as China's reaction to the Intermediate Nuclear Forces (INF) treaty signed by the US and Soviet Union in 1987; and the Strategic Defense Initiative (SDI) proposed by US President Reagan in 1983.

Overall, this chapter will argue three things. First, in this period China sought to secure its position in global nuclear order by formulating its first nuclear strategy and developing a second strike force capability. With this new-found confidence, China self-identified itself as a middle-sized nuclear power, different to the superpowers but comparable to the UK and France. Second, in the late 1970s, China began to engage with nuclear order by shifting its positions on arms control, disarmament and proliferation and by participating in key institutions of nuclear order. Third, China's new-found confidence in and engagement with institutional aspects of nuclear order underscored, however subtly,

a desire for a future nuclear order that would be more representative of its members, based not on bipolarity or unipolarity, but on multipolarity.

Global Nuclear Developments

By the mid-late 1970s, key institutions of the global nuclear order were in place, most notably the International Atomic Energy Agency (IAEA) set up in 1956; the Non-Proliferation Treaty (NPT) established in 1968;[1] efforts to regulate nuclear commerce beyond the Atoms for Peace with the 1977 International Fuel Cycle Evaluation and International Plutonium Storage (IPS) scheme;[2] treaties banning the testing of nuclear weapons such as the 1963 Partial Test Ban Treaty (PTBT) and 1974 Threshold Test Ban Treaty (TTBT);[3] as well as two major arms control agreements between the superpowers signed in 1972: the Strategic Arms Limitation Talks (SALT I) and the Anti Ballistic Missile Treaty (ABM). In addition, in 1979 the Conference on Disarmament (CD) replaced the Eighteen Nation Disarmament Committee. That year, the US and former Soviet Union also signed SALT II, a follow-on to the Strategic Arms Limitation Talks. These developments occurred amidst a 'calm' of parity that had finally been reached by the superpowers in the 1970s.[4] Under parity, mutual assured destruction (MAD) was maintained, preserving strategic stability. The ABM treaty played an important role in this

[1] During this period, Japan (signed 1970, ratified 1976), South Korea (signed 1968, ratified 1975) and Taiwan (signed 1968, ratified 1970) became members of the NPT. When the People's Republic of China assumed the China seat at the UN in 1971, Taiwan ceased to be a party to the NPT. However, in 1971 Taiwan signed an agreement with the US and the IAEA stating that it would continue to abide by the NPT.
[2] These ultimately failed too; nevertheless they represented attempts to provide proliferation-resistant nuclear energy. They emerged amid disputes over nuclear trade in the 1970s when interest in nuclear energy started to decline following global economic crises and the 1979 Three Mile Island nuclear reactor accident in the US. On these issues, see William Walker, *A Perpetual Menace: Nuclear Weapons and International Order* (London: Routledge, 2011), pp. 87-97.
[3] In addition, in 1976, the Peaceful Nuclear Explosions treaty was signed between the US and USSR.
[4] Lawrence Freedman, *The Evolution of Nuclear Strategy*, 2nd edn., (London: Macmillan, 1989), p. 359 and p. 364.

regard, based on the idea that defensive systems only served to increase the arms race, undermining MAD.[5]

However, the parity that existed in the 1970s soon began to unravel. In the early 1980s, the US became increasingly concerned that the USSR was not operating under conditions of parity and stability but was instead quietly increasing its nuclear forces, thereby engineering a shift away from assured destruction towards nuclear superiority. The US was particularly concerned that the USSR was pursuing a war-fighting strategy for winning a limited nuclear war.[6] This concern was exacerbated by Soviet SS-20 missiles targeted on Western Europe, the increases in its defence spending during this period,[7] and wider foreign policy behaviour, such as Moscow's decision to intervene in Afghanistan in 1979. Indeed, these considerations played a part in the US decision not to ratify SALT II in 1986. Thus began a new arms race in the 1980s, with the USSR and the US seeking to out-do each other and re-gain nuclear supremacy over one another. [8]

The US adopted several approaches in this regard. First, between 1981 and 1987, the US pursued INF negotiations with the USSR so as to reassure European allies by placing a limit on Soviet SS-20 missiles in the region. Second, as outlined in Presidential Directive 59 issued in 1980, the US adopted a countervailing strategy which focused on the capability to wage a limited nuclear war. Third, in 1983, President Reagan proposed the Strategic Defense Initiative to end the game of deterrence all together, and secure US superiority through missile defence.[9] Fourth, the US reinforced its extended nuclear

[5] Herbert York, ed., *Arms Control* (San Francisco: W. M. Freeman, 1973), p. 276.
[6] Colin Gray and Keith Payne, 'Victory is possible', *Foreign Policy*, No. 39, Summer 1980, pp. 14-27; Donald W. Hanson, 'Is Soviet Strategic Doctrine Superior? *International Security*, Vol. 7, No. 3, Winter, 1982-1983, pp. 61-83; John Baylis and Gerald Segal, eds., *Soviet Strategy* (London: Croom Helm, 1981).
[7] Raymond Garthoff, *Detente and Confrontation: American-Soviet Relations from Nixon to Reagan* (Washington D.C.: Brookings Institution, 1985), p. 795.
[8] David Holloway, *The Soviet Union and the Arms Race* (London: Yale University Press, 1983).
[9] On Reagan's disdain for strategic stability, see Walker, *A Perpetual Menace*, pp. 99-101. See also Freedman, *The evolution of nuclear strategy*, p. 393.

commitments in Asia with the 1978 Guidelines for Japan-US Defence Cooperation; adding nuclear armed cruise missiles to the US Pacific fleet in 1984; and deploying, in 1986, medium range nuclear capable missiles to South Korea. The US also increased its nuclear presence in Western Europe following the decision by NATO in 1979 to deploy 572 American medium range ballistic and cruise missiles on European soil.

Such changes heightened tensions between the superpowers[10] and aggravated Chinese governmental concerns, especially the idea of limited nuclear wars and missile defence.[11] To complicate matters, China remained a weak nuclear weapons state, and had retreated from the global nuclear order in the late 1960s. In addition, China's relations with the Soviet Union remained significantly damaged by the border war in 1969 which almost resulted in a Soviet strike on Chinese nuclear facilities. Fortunately for China, US-China relations continued on the path towards normalisation, culminating in the 1978 joint communiqué establishing full diplomatic relations between both countries. China thus supported the decision to station US nuclear forces in Western Europe and Asia as a countermeasure to Soviet influence. However, if China wanted to secure its position in the nuclear order, an order entangled in a race between the superpowers, it would need to do more than simply support the US. Instead, China would arguably need a nuclear strategy backed by credible capabilities; it would also need to come out of isolation and participate in the nuclear order. It is perhaps with these tasks in mind that China approached questions relating to nuclear order in the 1970s and 1980s.

[10] The 1983 Able Archer incident, in which the USSR mistook a NATO military exercise for a nuclear attack, and made preparations for a pre-emptive strike, is evidence of the heightened tension between the superpowers during this period.

[11] On a Chinese view of the environment, see Wang Qianqi, 'Nuclear weapons and international security', in Hansh Kapur, ed., *As China sees the world, perceptions of Chinese Scholars* (Frances and Pinter: London, 1987), pp. 38-48.

The Search for a Nuclear Strategy

In 1978, Deng Xiaoping launched the 'Four Modernizations' placing defence modernization the last of the four, subordinate to economic development.[12] As a consequence the defence budget was reduced, slowing down the pace of weapons development. Such a decision seems, in retrospect, a risky one since China began the post Mao period with no second strike force capabilities in place. This meant that China's declared policy of no-first-use (NFU) rendered the country extremely vulnerable to a nuclear first strike. At that time, China's nuclear arsenal consisted of around 80 TU-16 bombers that could not penetrate US or USSR air defences; 30-40 intermediate range ballistic missiles that could not reach the US, and only a few USSR cities; no intercontinental ballistic missiles (ICBM); and no submarine launched ballistic missiles (SLBM). In fact, China's ICBM and SLBM systems were several years behind schedule. Throughout the late 1970s and most of the 1980s, relative to other nuclear states, China was arguably the weakest nuclear actor in the nuclear order. However, despite the de-prioritisation of defence in China, the pursuit of nuclear capabilities was not abandoned during this period. In 1981, two ICBM systems, the DF-5 and DF-4 were deployed, and then in 1986, China launched a SLBM system.[13]

In fact, the de-prioritisation of defence sparked important domestic debates in the post 1969 half decade, some of which transformed military thinking, facilitating the formation of China's first nuclear strategy. One of the first discussions that took place

[12] The Four Modernizations refer to China's agriculture, industry, science and technology, and national defence.

[13] For US intelligence estimates of these systems, see Edward N. Fletcher, 'China's ICBM Force Begins to Take Shape' Defense Estimative Brief, DEB-14-85, 7 February 1985, Item No. CH00696, China and the U.S Collection; 'Checkout Facility Identified at Wuzhai Missile Test Center', Intelligence Report, 14 May 1982, Collection: Nuclear Non-Proliferation Item Number: NP01954; and Edward N. Fletcher, 'China's Evolving Nuclear Strategies', Defense Intelligence Estimate, DDE-2200-321-85, May 1985, Collection: China and the U.S., Item Number: CH00714, all via DNSA. See also International Institute for Strategic Studies (IISS) *Military Balance, 1985-6* (London: IISS, 1985/6), pp 111-113.

related to the timing and urgency of military modernization. In 1977, a theoretical group of the PLA Academy of Military Sciences challenged the decision to place defence last of the Four Modernizations by echoing an argument used by Nie Rongzhen to defend the nuclear programme in the 1950s: military modernization was not just about national defence, the defence sector was also a highly advanced sector of benefit to the wider economy. [14] Others, such as China's defence minister Xu Xiangqian, adopted a harder line, arguing that since the prospect of nuclear war remained high, de-prioritising defence was too costly a compromise.[15] Yet, an alternative view emerged that the military, long a priority in China, could now afford to bide its time. According to this view, superpower parity meant the likelihood of nuclear war had actually reduced, and China had sufficient conventional forces to deter an attack. [16] This was the opinion of a powerful group, namely Deng Xiaoping, Foreign Minister Huang Hua and a pivotal figure in China's nuclear programme, Nie Rongzhen. [17] In particular, Huang and Nie, for reasons left unexplained, felt that Moscow would hesitate to launch nuclear war.[18]

Ultimately, the more moderate view promoted by this powerful group won out, and discussions centred on how modernization would be carried out. In 1977, four military conferences took place in China to discuss this issue. [19] At these conferences, a consensus

[14]Theoretical Group of the Academy of Military Science, 'Speed up the revolutionization and modernization of our army, build a powerful national defence army', *Red Flag*, August 1977, pp. 31-35, quoted in Herbert S. Yee, 'The three world theory and Post- Mao China's global strategy', *International Affairs*, Vol. 59, No.2, 1983, p. 243, ft. 13. See also Thomas W. Robinson, 'Chinese military modernization in the 1980s', *The China Quarterly*, No. 90, 1982, p. 249.
[15] Yee, 'The three world theory and Post- Mao China's global strategy', p. 243.
[16] Ibid, p. 243.
[17] Huang Hua, speech at the UN General Assembly Special Session on Disarmament, 29 May 1978 and speech by Nie Rongzhen at National Working Conference on the Militia, 8 August 1978, both quoted in Yee, 'The three world theory and Post- Mao China's global strategy', pp. 239-249. Nie Rongzhen was then a vice-chairman of the Central Military Commission.
[18] Perhaps this view was shaped by the Sino-Soviet 1969 border war experience, during which Moscow decided, for reasons still unknown, not to attack Chinese nuclear facilities. The position of this group changed somewhat in 1979 following the USSR invasion of Afghanistan, see 'Soviet military strategy for world domination', *Beijing Review*, No.4, 28 January 1980.
[19] David Shambaugh, 'Military modernization and the politics of technology transfers', *Contemporary China*, Vol.3, No.3, 1979, pp.4-5.

emerged that defence modernization would be best served through greater access to western conventional technology, in keeping with the national goal of economic development. This also underscored the importance of nurturing relations with the US.[20]

Changes also took place in China's military strategy with implications for its nuclear posture. Initially, in 1978, 'People's War' was modified into 'People's War under Modern Conditions', with a focus on defending against the USSR. Then, in the mid 1980s, as the Soviet threat receded, an even bigger shift in strategy took place, from general war with the USSR to small scale wars.[21] In other words, China no longer based military planning on the prospect of entanglement in a world-wide 'early stage, large scale war with nuclear weapons' but instead re-orientated PLA planning to limited conflicts in the context of a new strategic environment of 'peace and development'.[22] Joffe explains that this shift reflected change in Chinese nuclear thinking: whereas Beijing used to contend that nuclear weapons would not be enough to destroy China (on the basis that a ground invasion would be required, as highlighted in chapter two) this no longer applied in the context of limited nuclear wars and war-winning strategies under consideration by the superpowers at the time. Wang expands on this, highlighting how China's past strategy of 'luring into the deep' no longer sufficed --especially in deterring the USSR-- since it placed at risk the northern areas of China where its nuclear plants and missile sites are located.[23]

[20] William T. Tow and Douglas T. Stuart, 'China's military turns to the west', *International Affairs*, Vol. 57, No. 2, Spring 1981, pp. 286-300.
[21] Paul H.B. Godwin, 'Chinese military strategy revised: local and limited war', *Annals of the American Academy of Political and Social Science*, Vol. 519, 1992, pp. 191-201.
[22] Evan Medeiros, 'Evolving Nuclear Doctrine', in Paul J. Bolt and Albert S. Willner, eds., *China's Nuclear Future* (London: Lynne Rienner, 2006), p. 51.
[23] Robert S. Wang, 'China's evolving strategic doctrine', *Asian Survey*, Vol. 25, No. 10, October 1984, pp. 1047-1048.

In parallel with these debates, Chinese military strategists began research on nuclear doctrine, indicative of plans to formulate China's first nuclear strategy.[24] In particular, the Second Artillery initiated internal research on the use of nuclear weapons and the requirements of deterrence. In the 1980s, the Second Artillery formulated regulations like the Second Artillery Military Terms. Research also began on 'nuclear strategy theory'.[25] Among several debates between Chinese strategists in the 1980s, one centred on the declaratory policy of rejecting deterrence. The end result of these discussions was the continued rejection of the term at declaratory levels, but use of the term internally. Chinese considered deterrence *weishe* (威慑) a derogatory term, reflective of an offensive strategy and thus ill-suited to China's nuclear weapons policy based on NFU and defence.[26]

Despite overt public rejection of nuclear deterrence, convergence started to form among military strategists and senior Chinese leaders over the importance of retaliation. Indeed, the 1987 military handbook *Zhanlue Xue* 战略学 (*Science of Military Strategy*), set against the background of a Soviet invasion from the north, outlined that the primary mission of China's nuclear forces was to deter a nuclear attack.[27] Support for retaliation was also clear in statements made by China's leader Deng Xiaoping, who outlined 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'.[28] Later, in

[24] Medeiros, 'Evolving Nuclear Doctrine', pp. 49-51; and Alastair I. Johnston, 'Prospects for Chinese Nuclear Force Modernization: Limited Deterrence versus Multilateral Arms Control', *The China Quarterly*, No.146, 1996, pp.543-576.
[25] Medeiros, 'Evolving Nuclear Doctrine', pp. 49-51.
[26] Author interview, Beijing, 16 July 2011(No. 29).*Weishe* derives from *weixie* 威胁, which means to threaten.
[27] For more on this document, see M. Taylor Fravel and Evan S. Medeiros, 'China's Search for Assured Retaliation, the Evolution of Chinese Nuclear Strategy and Force Structure', *International Security*, Vol. 35, No. 2, 2010, pp. 70-72.
[28] Quoted in ibid, p. 64.

1983 he remarked that 'anyone who wants to destroy us will be subject to retaliation'.[29] PLA General Zhang Aiping reinforced this view, noting in 1981 that the power to strike back was the main task of strategic weapons.[30] Later, in 1986, as Minister of Defence, Zhang added that China's nuclear forces 'although few in number and poor in quality compared with others, we still have achieved the power to strike back'.[31]

Following the deployment of the ICBM and SLBM systems in the late 1980s, China finally satisfied the basic credibility and capability requirements of nuclear deterrence, paving the way for its first nuclear strategy based on retaliation. Retaliation meant that China's nuclear deterrent capability was no longer symbolic, as it had been in the past, but actual, reducing the threat of sudden attack. Crucially, the strategy of retaliation relied on the principle of 'first strike uncertainty'.[32] Under first strike uncertainty, the enemy cannot be sure that a strike would be overwhelming and decisive because the scale of China's retaliatory capabilities was unknown. To maintain this strategy of uncertain retaliation, Chinese military strategists relied on ambiguity and secrecy regarding the size, type and location of their nuclear forces.[33] For example, during this period fake silos were built to improve the chances that China's ICBM sites would survive a first strike[34] and nuclear weapons were dispersed in narrow mountain valleys.[35]

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[29] Medeiros, 'Evolving Nuclear Doctrine', pp. 49-50.
[30] Zhang Aiping, *Zhang Aiping junshi wenxuan* [Zhang Aiping's selected works on military affairs](Beijing: Changzheng chubanshe, 1994), p. 392.
[31]Ibid, p. 575. General Zhang was defense minister from 1982 to 1988. For more on Zhang Aiping, see Fravel and Medeiros, 'China's Search for Assured Retaliation', pp.64- 65.
[32]Avery Goldstein, *Deterrence and Security in the 21st Century: China, Britain, France and the Enduring Legacy of the Nuclear Revolution* (Stanford University Press, Stanford, 2001), p. 44 and p. 136; and Devin Hagerty, *The Consequences of Nuclear Proliferation: lessons from South Asia* (London: MIT Press, 1998), p. 26.
[33] Evan Medeiros, 'Evolving Nuclear Doctrine', p. 49.
[34] Phillip C. Saunders and Jing-dong Yuan, 'Strategic force modernization' in Bolt et al, eds., *China's nuclear future*, p. 93.
[35] Paul Dibb, 'China's strategic situation and defense priorities in the 1980s', *Australian Journal of Chinese Affairs*, No.5, January 1981, p.103.

Many in the West doubted that uncertain retaliation would remain in place for long, rejecting the view, as outlined by Chinese senior officials and noted above, that Beijing would be content with such a minimal retaliatory capability. For many western analysts, uncertain retaliation was simply a transitory strategy until China achieved parity with the US and USSR.[36] Many pointed out that in the event of an impending Soviet invasion, China's NFU policy would likely be quickly discarded revealing China's true strategic intentions.[37] According to this view, China's ultimate goal was to pursue a warfighting strategy. However, the economic and technical constraints of the reform period simply prevented China from pursuing this strategy for the time being. Indeed, a warfighting strategy would require drastic changes to China's nuclear forces so as to deter both nuclear and conventional conflicts, including the development of tactical nuclear weapons.[38] For Wang, tactical weapons made sense in deterring the USSR.[39] Segal pointed to added incentives for this strategy, such as geographical vulnerabilities in the North, and China's lack of trust in the superpowers.[40] Similarly, Johnston highlighted certain discussions among Chinese analysts at that time calling for a future strategy akin to warfighting, what he termed 'limited deterrence'.[41]

In summary, during the period of opening up and reform defence was de-prioritised. However, this sparked several important internal discussions, altering established beliefs on nuclear weapons and providing a platform from which to develop China's first nuclear

[36] Agatha S.Y. Wong-Fraser, 'China's nuclear deterrent', *Current History*, Vol. 80, No. 467, September 1981, pp. 245-276; and Chari, 'China's nuclear posture', pp. 817-828.
[37] Gerald Segal, 'Strategy and 'Ethnic Chic'', *International Affairs*, Vol. 60, No. 1, 1983/84, p.26.
[38] Tow and Stuart, 'China's military turns to the west', p.291 and p. 294; Harlan W. Jencks, 'People's War under Modern conditions: wishful thinking, national suicide or effective deterrent?', *The China Quarterly*, No. 98, 1984, pp. 305-319; and Richard Fieldhouse, 'China's mixed signals on nuclear weapons', *Bulletin of the Atomic Scientists*, Vol. 47, No. 4, May 1991, pp. 37.
[39] Wang, 'China's evolving strategic doctrine', p. 1050.
[40] Gerald Segal and William T. Tow, *Chinese Defence Policy* (Urbana: University of Illinois Press, 1984), pp. 98-113.
[41] Alastair I. Johnston, 'China's New "Old Thinking": The Concept of Limited Deterrence', *International Security*, Vol. 20, No. 3, 1995/ 96, pp. 5–42.

strategy. The Chinese government realised this strategy of uncertain retaliation in the late 1980s, following the completion of basic second strike force capabilities. However, many in the West were unconvinced that China would be content with this strategy, and that once the reform period was over they believed China would pursue a warfighting strategy.

Cautious and Contradictory Engagement with Nuclear Order

Beyond nuclear strategy, during the late 1970s and 1980s significant changes were underway in China's approach towards arms control, non-proliferation and disarmament, with important implications for global nuclear order.[42] Essentially, China began to engage in the process of consolidating global nuclear order. It did so in three main ways: first, by joining key nuclear organizations and treaties such as the CD; second, China sought to indirectly influence superpower arms control discussions, in particular the INF treaty; and third, a community of experts on nuclear issues slowly began to emerge in China.[43]

As early as 1978, Chinese Foreign Minister Huang Hua declared China's intent to participate more actively in institutions. In this vein, China joined the CD[44] in 1980 and became involved in various disarmament committees in the UN.[45] Then, in 1984, China joined the International Atomic Energy Agency (IAEA) and placed nuclear exports under IAEA safeguards. China also assured Japan that it would accept IAEA inspections to prove its spent fuel was not being re-used for military ends. Additionally during this period, China signed the Outer Space Treaty in 1983, and between 1984 and 1985 signed nuclear cooperation agreements with Argentina, Brazil, Belgium, the UK and US.[46]

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[42] William V. Garner, 'SALT II: China's advice and dissent', *Asian Survey*, Vol. 19, No. 12, 1979, pp. 1224-1240.
[43] Medeiros, 'Evolving Nuclear Doctrine', pp. 52-53.
[44] At the time, the CD was part of the Committee on Disarmament, in 1984 it was renamed the Conference on Disarmament.
[45] Ann Kent, *Beyond Compliance, China, International Organizations, and Global Security* (Stanford: Stanford University Press, 2007), p. 69.
[46] Wendy Frieman, 'Chinese arms control and nonproliferation behavior, 1982-1994: a chronology', Science Applications International Corporation (SAIC) report, 4 May 1995; see also Evan Medeiros, *Reluctant*

Beyond arms control, China began to set-out clear support for non-proliferation. China's decision to enter into negotiations towards a Nuclear Cooperation Agreement (NCA) with the US in 1981 was particularly important in this regard. During the negotiations, US Secretary of State Shultz linked progress to China's commitment to non-proliferation. According to Qingshan Tan, this 'agreement had an immediate influence on China's shift from its declaratory nuclear policy to one acknowledging and accepting international non-proliferation norms and practices'.[47] Indeed, senior Chinese leaders in the mid 1980s made several statements in support of non-proliferation. To this effect, in January 1984 Chinese Premier Zhao Ziyang stated that the Chinese did not 'engage in nuclear proliferation ourselves, nor do we help other countries to develop nuclear weapons'.[48] Later that year in an address to the 6th National People's Congress, Zhao re-asserted this position, arguing that China 'by no means favoured nuclear proliferation, nor would China engage in such proliferation by helping other countries to develop nuclear weapons'.[49] Chinese Vice Premier Li Peng voiced a similar position in 1985, highlighting that 'China has no intention, either at present or in the future, to help nonnuclear countries develop nuclear weapons'.[50] China's Ambassador for Disarmament Affairs, Qian Jiadong went even further in 1985 by announcing that China was willing to reconsider its position on the NPT, and by 1987, internal discussions on the NPT began.[51] Throughout this period China also continued to support nuclear weapons free zones. In 1986, Zhu Qizhen, China's

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Restraint, the evolution of China's nonproliferation policies and practices, 1980-2004 (Stanford: Stanford University Press, 2007).

[47]Tan Qingshan, 'U.S.-China Nuclear Cooperation Agreement, China's Nonproliferation Policy', *Asian Survey*, Vol. 29, No. 9, 1989, p. 870.

[48]Quoted in ibid, p. 879.

[49] Ibid, p. 879.

[50] Ibid, p. 879.

[51] Medeiros, *Reluctant Restraint*, pp. 41-42. See also speech by Premier Zhao Ziyang, at the United Nations, quoted in Ken Coates, *China and the Bomb* (Nottingham: Humanities Press, 1986), pp. 99-103.

Vice Minister for Foreign Affairs expressed support for a nuclear weapons free Korean peninsula; and a year later signed the South Pacific Nuclear Weapons Free Zone.

Second, China engaged with the nuclear order by indirectly influencing the INF treaty negotiations between the superpowers. Initially, China considered the negotiations simply an attempt by the US and USSR to get the upper hand in the arms race.[52] This position changed in 1983, following Chinese concern over Soviet plans to shift SS-20 missiles from Europe nearer to the Sino-Soviet border.[53] The INF negotiations presented additional challenges for China: in 1986/7 both the US and Soviet Union suggested leaving 100 INF warheads on Asian soil; and then, in the mid 1980s the USSR called for Chinese, British and French participation in the talks.[54] China's response to these challenges was two-fold. First, China's representative at the CD, Li Luye, made a call for global ceilings on INF, stating that 'the outcome of the Soviet-American nuclear negotiations should in no way prejudice the interests of third states…any INF agreement which allowed the Soviet Union to transfer theatre nuclear forces to the Far East was unacceptable to China'.[55] Then, in May 1983, China laid out three conditions for INF: linking European arms control with Asian arms control; no transfer of intermediate forces to Asian territory; and the reduction of SS-20s in Asia.[56] Both the conditions and the call for a global ceiling complemented respective positions put forward by France and the UK. Indeed, China repeatedly referred to the UK and France, allying with these countries as a fellow 'middle sized nuclear power'. In this vein, according to Qian Jiadong, China's

[52] See 'Peking raps 'fraudulent' arms limitation talks', *Xinhua*, 17 October 1977, FBIS-CHI-77200; and 'Foreign Ministry spokesperson on USSR-US INF Negotiations', *Xinhua*, 20 November 1983, FBIS-CHI-83-231.
[53] J.Mohan Malik, 'China and the intermediate-range nuclear forces talks', *Contemporary Security Policy*, Vol. 10, No.3, 1989, pp. 235-274.
[54] Ibid, p. 258.
[55] Quoted in ibid, p. 240. See also *Xinhua*, 'Envoy wants Asia to be included in missile removal deal', FBIS-CHI-87-123, 26 June 1987; and *Xinhua*, 'Zhao welcomes arms talks', 11 July 1985, FBIS-CHI-82-216.
[56] Malik, 'China and the intermediate-range nuclear forces talks', p. 241.

representative to the UN in 1983, 'small and medium sized states are entitled to maintain their necessary forces for national defence. The disarmament process should in no way jeopardise the independence, sovereignty and security of any state'.[57] In the end, to China's strategic advantage, the USSR decided to eliminate all its intermediate missiles from both Europe and Asia in the INF treaty signed by the superpowers in 1987.[58]

China also sought to influence superpower discussions over missile defence, considering SDI particularly problematic.[59] In 1984, Chinese Premier Zhao Ziyang commissioned the Beijing Institute for International Studies to study the potential implications of SDI for China. The main conclusion of the report was that SDI represented an effort by the US to regain nuclear supremacy over the USSR. Unfortunately, in the process SDI could potentially neutralise China's nuclear deterrent, exposing China, once again, to nuclear blackmail.[60] This realisation led Deng Xiaoping to officially state China's opposition to SDI in 1985. Further, as in the INF negotiations, China brought France and the UK into its argument. Analysts such as Wu Jin contended that 'the establishment of separate US and Soviet space defence systems will render ineffective the strategy of nuclear deterrence of the west…Britain and France will no longer be able to boast of their nuclear forces as a symbol of their world power status'.[61] Garver adds that the Chinese outlined support for the French alternative to SDI in Western Europe: EUREKA.[62] This approach fed into China's wider agenda at that time of broadening the

[57] Quoted in ibid, p. 248.
[58] *Christian Science Monitor*, 'China Offers to Join Group discussing Nuclear Test Ban', 21 February 1985 via Lexis-Nexis.
[59] Zhang Yang, 'Zhongguo zhanlue hewuqi fazhan yu Meiguo zaoqi ABM bushu jihua' [The Development of China's Strategic Nuclear Weapons and the United State's Early ABM Plans] *Dangdai Zhongguo yanjiu* [Contemporary China History Studies], Vol.11, No.1, January 2004, pp. 36-42.
[60] Zhuang Qubing, 'Space and Strategic Defence: A Chinese View', *Survival*, Vol. 27, No. 1, 1985, pp. 35-38.
[61] Quoted in Malik, 'China and the intermediate-range nuclear forces talks', p. 252.
[62] John W. Garver, 'China's response to the strategic defense initiative', *Asian Survey*, Vol. 26, No.11, 1986, pp. 1220-1239.

reach of other actors, beyond the superpowers, on the nuclear playing field. Indeed as Garver highlights, 'Europe plays a crucial role in Beijing's vision of a desirable world order…China's leaders seek the eventual replacement of a bipolar world dominated by the two superpowers with a multiple world in which there are at least five more or less equal centers of power'.[63]

Third, China's commitment to nuclear order is evident in the decision to develop a community of experts on nuclear issues within China. As Medeiros highlights, 'in the early and mid 1980s, no Chinese officials had a particular experience in nuclear non-proliferation'.[64] This lack of experience extended to arms control.[65] Thus, in 1982, the Foreign Ministry established a five-member disarmament division. Then, in 1983, the Ministry of Foreign Affairs created a new role: special ambassador for disarmament affairs to represent China at the CD and the UN. Qian Jiadong was appointed to this position and then replaced by Fan Guoxiang in 1987. Elsewhere, representatives from the defence industry and officers from the PLA General Staff were sent to the Chinese delegation at the CD in Geneva. Beyond official channels, an arms control community of experts began to emerge in universities like the National Defense University (NDU), Foreign Affairs University, Fudan University and Tsinghua, as well as think tanks such as the China Institute for International Affairs. In 1986, China's first major conference on arms control took place, organised by the China Institute of Contemporary International Relations (CICIR, a research arm of the Ministry of State Security), the conference included

[63] Ibid, p. 1231.
[64] Medeiros, *Reluctant Restraint*, p. 49.
[65] Author interview, Beijing, 30 October 2010 (No. 35).

participants from leading research institutes as well as the NDU, PLA General Staff and Academy of Military Sciences.[66]

Elsewhere, however, Chinese nuclear weapons behaviour suggested that it was not yet prepared to fully commit itself to the nuclear order. For instance, China's frequent use of the title middle sized nuclear power afforded Beijing a position of non-negotiability in arms control and disarmament negotiations, such as the INF. This also meant that China would not seek a leadership role in the global nuclear order. In addition, between 1979 and 1989, China continued to support nuclear disarmament, but the conditions attached had hardened: China now demanded substantial nuclear force reductions by the superpowers as a precondition to participation in any agreements.[67] The size of the reduction initially oscillated from 50% to at least 1,000 warheads each.[68] Then, in 1988, China proposed the 'Three Halts/Cessation and One Reduction' idea to agree not to test, produce, or deploy nuclear weapons and to reduce nuclear arsenals to an unspecified number well below levels currently being discussed by the superpowers.[69]

More problematically for nuclear order, though many Chinese officials had declared their support for non-proliferation, the US alleged that China was engaged in suspected pro-proliferation activities in Pakistan.[70] The US State Department first suspected Chinese activities in 1982, and by 1983, US intelligence sources suggested that the Chinese had assisted Pakistan with the production of fissile materials as well as

[66] Alastair Iain Johnston and Paul Evans, 'China and multilateral security institutions', in Alastair Iain Johnston and Robert S. Ross, eds., *Engaging China* (London: Routledge, 1999), p. 243; and Johnston, *Social States*, pp. 59-64.
[67] J. Mohan Malik, 'China's Policy towards Nuclear Arms Control in the Post-Cold War Era', *Contemporary Security Policy*, August 1996, p. 5; and Liu Huaqiu, 'Analysis of Nuclear Arms Control Policy', *Xiandai junshi* [Military Today], 11 November 1995, translated English version via FBIS-CHI-95-246.
[68] Huang Hua reprinted in Coates, *China and the Bomb*, pp.64-80. See also Banning N. Garrett and Bonnie S. Glaser, 'Chinese Perspectives on Nuclear Arms Control', *International Security*, Vol. 20, No.3, Winter 1995/6, p. 47.
[69] Malik, 'China's Policy towards Nuclear Arms Control in the Post-Cold War Era', p. 6; and 'Qian Qichen's speech at the UN disarmament session', *Beijing Review*, 13-19 June 1988, pp. 14-18.
[70] The full extent of these activities is still unknown today. The US suspected similar Chinese activities in Algeria and Iran, see Medeiros, *Reluctant Restraint*, pp. 54-59.

information regarding nuclear warhead and missile designs.[71] Concerns in the US regarding the nature of Pakistani-Chinese cooperation had existed since the 1960s.[72] By 1965, China had become Pakistan's main supplier of conventional arms and in 1976 China is said to have signed an agreement to formalise nuclear cooperation.[73] Western analysts suspect that following India's peaceful nuclear explosion (PNE) in 1974 Pakistan decided to initiate a nuclear weapons programme and turned to China for help.[74] Certain media reports in Pakistan claim that by 1979 China had supplied UF6 to Pakistan, an important compound in the uranium enrichment process.[75] Later, after China signed a comprehensive civilian nuclear cooperation agreement with Pakistan in 1986, reports surfaced suggesting that Chinese scientists had also offered assistance with the enrichment of weapons-grade uranium, and had transferred enough tritium gas to Pakistan for 10 nuclear weapons. China even allegedly involved Pakistani scientists in a nuclear test at its Lop Nor test site in 1989.[76] Despite these reports, China has continued to insist that its nuclear cooperation

[71] For the US intelligence documents, see US embassy China cable 17090 to State Department, 'Arms Control and Disarmament', secret State Department FOIA release, 17 December 1982, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB114/chipak-8.pdf; US State Department cable 348835 to US Embassy Pakistan, 'Newsweek Article on Chinese Nuclear Cooperation with Pakistan', secret State Department FOIA release, 18 December 1982, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB114/chipak-10.pdf; and US State Department, 'The Pakistani Nuclear Program', secret State Department FOIA release, 22 June 1983, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB114/chipak-11.pdf [all accessed 20 October 2011], p. 6.

[72] George C. Denney, Deputy Director of Intelligence and Research, US Department of State, to Secretary Rusk, 'Pakistan and Communist China Strengthen Cooperation', 4 December 1968, US National Archives, Record Group 59, Records of the Department of State, Subject-Numeric Files 1967-1969, POL1 Chicom-Pak.

[73] Zulfikar Ali Bhutto, Pakistan's Prime Minister from 1973 to 1977, has referred to this agreement. See John W. Garver, *Protracted Contest, Sino-Indian Rivalry in the Twentieth Century* (Seattle: University of Washington Press, 2001), pp. 329-330. The details of the 1976 agreement remain unknown, but Medeiros is doubtful the agreement included direct assistance in the nuclear weapons field. See Medeiros, *Reluctant Restraint*, p.40.

[74] William Burr, 'China, Pakistan, and the Bomb: the declassified file on US policy 1977-1997', National Security Archive Electronic Briefing Book No. 114, 5 March 2004, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB114/index.htm [accessed 20 May 2011]. On A.Q. Khan and China-Pakistan nuclear cooperation in the 1980s, see David Albright, Paul Brannan, and Andrea Scheel Stricker, 'Self-Serving Leaks from the A.Q. Khan Circle', ISIS report, 9 December 2009, http://isis-online.org/isis-reports/detail/self-serving-leaks-from-the-a.q.-khan-circle/ [accessed 10 December 2009]

[75] Adrian Levy and Catherine Scott-Clark, *Deception: Pakistan, the US and the global nuclear weapons conspiracy* (London: Atlantic books, 2007), p. 62; and Garver, *Protracted Contest*, p. 329, ft.30.

[76] For all these allegations, see Center for Nonproliferation Studies (CNS), 'China's Nuclear Exports and Assistance to Pakistan', undated, http://cns.miis.edu/archive/country_india/china/npakpos.htm [accessed 20

with Pakistan has been purely for 'peaceful purposes'. In any event, by the late 1980s, the US had a different set of priorities: securing Pakistani cooperation to counter Soviet actions in Afghanistan.[77]

In summary, China had a half-in, half-out approach in its engagement with nuclear order in the 1980s. On the one hand, China engaged with nuclear order by joining major institutions such as the CD and IAEA. China also sought to indirectly influence arms control negotiations over the INF treaty as well as discussions surrounding SDI. However, on the other hand, China may well have parted ways with core principles of nuclear order, such as non-proliferation, in its alleged decision to provide technical assistance to the Pakistani nuclear weapons programme.

Understanding China's Engagement

In the reform era, China engaged with nuclear order in two main ways: first, by formulating a nuclear strategy, and second, by participating in a cautious and contradictory fashion with institutional aspects of nuclear order. In understanding this engagement, domestic concerns related to economic development and political reform, as well as changes in the external security environment are particularly insightful.

In terms of domestic factors, the economic and technical constraints of the reform period meant that weapons development would likely be slow and minimal. China's nuclear strategy would have to reflect this reality. From a practical standpoint, it could not be too ambitious given the basic capabilities available. China's strategy, based on uncertain retaliation and an emphasis on ambiguity and minimalism, met this requirement. Economic motives also underpinned China's decision to sign civilian nuclear cooperation

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October 2011] and R. Jeffrey Smith and Joby Warrick, 'A Nuclear Power's Act of Proliferation', *The Washington Post*, November 13, 2009.

[77] See Medeiros, *Reluctant Restraint*, pp. 50-54; and US Embassy China cable 24244 to State Department, 'Pakistan Foreign Minister Visits PRC: Nuclear Cooperation and Afghanistan', 29 September 1986, State Department FOIA release, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB114/chipak-15.pdf [accessed 20 October 2011]

agreements (NCA), not just with Pakistan but also with the US, the UK, Belgium, Brazil and Argentina. In particular, the Chinese considered the NCA with the US crucial to the development of its civilian nuclear industry.[78] Similarly, Prados explains that China's decision to sign the Outer Space Treaty and join the IAEA were linked also in part to economic reform since these qualified China for US assistance with nuclear energy projects.[79] Conversely, however, economic and technological imperatives explain China's decision to sell dual use technology to India and Pakistan. As Medeiros points out, China gathered important technical knowledge in its collaboration with Pakistan, in particular regarding gas centrifuge technology. [80]

Elsewhere, internal political and bureaucratic changes provided fertile ground for debates on military modernization and strategy, including a reappraisal of past strategic thought such as Sun Tzu, something not possible under Mao.[81] In addition, this new landscape arguably freed China from the heavy ideological rhetoric that had dogged its positions on arms control and nonproliferation under Mao, allowing Beijing to outline in public its support for non-proliferation. It was also conducive to the gradual emergence of a domestic community of experts on nuclear matters, most notably with the establishment of a disarmament division within the Ministry of Foreign Affairs and the new position of Ambassador for Disarmament. In addition to these internal bureaucratic changes, Johnston and Evans respectively credit the personal role of China's leader, Deng Xiaoping, who despite internal resistance, sent a delegation to the UN Special Session on Disarmament

[78] Tan, 'U.S.-China Nuclear Cooperation Agreement, China's Nonproliferation Policy', p. 875.
[79] John Prados, 'China's "new thinking" on nuclear arms', *Bulletin of the Atomic Scientists*, Vol. 45, No. 5, June 1989, p.32.
[80] Medeiros, *Reluctant Restraint*, p. 39.
[81] Author interviews, Beijing, 1 July 2011 (No. 61) and 16 July 2011 (No. 29). Taiwanese scholar Lin adds a cultural explanation for China's strategy, noting how principles such as ambiguity and minimalism were rooted in Chinese strategic culture, and thus represented a natural extension of wider Chinese strategic thought. See Chong-Pin Lin, *China's Nuclear Weapons Strategy, tradition within evolution* (Mass.: Lexington Press, 1988), pp.38-44.

(UNSSOD I) in 1978, providing momentum for China's eventual entry into the CD in 1980.[82] Nevertheless, as Li Shaojun highlights, commitments requiring a more drastic reversal in policy, such as signing the NPT, were beyond the domestic clout that Deng had at that time.[83]

Closely linked to the driving imperative of economic growth, Beijing sought to portray itself to the outside world as a reliable and responsible power by 'opening-up'[84] and in the process join a number of UN institutions, such as the IAEA and CD. Kent highlights the importance of timing in China's decision to join the CD: if it had waited one more month it would have lost the opportunity to assume chairmanship of the CD upon entry into that organization.[85] For its part, by joining the IAEA, China had agreed to subject its peaceful nuclear facilities to that organization at a loss to its national sovereignty.[86] This sent a significant message to the world that on matters related to nuclear cooperation it would be held to international account, conferring a degree of legitimacy on its place in nuclear order. As Hans Blix, then Director General of the IAEA stated, 'China's taking up membership of the IAEA is indicative of the practical usefulness which that country attaches to peaceful nuclear cooperation'.[87] Considerations of image and identity are evident in other aspects of China's engagement, such as the decision to reject deterrence in declaratory policy, pursue limited military modernization and devise a strategy based not on mutual assured destruction but on uncertain retaliation. These

[82] Johnston and Evans, 'China and multilateral security institutions', p. 240. Johnston and Evans also refer to China's first Ambassador for Disarmament, Qian Jiadong, who in 1985 recommended sending Chinese nuclear weapons scientists to a major international conference, offering an opportunity for Chinese scientists to interact with their Soviet and American counterparts, p. 241.
[83] Li Shaojun, 'Zhongguo yu hebukuosan tizhi' [China and the Nonproliferation Regime] *Shijie jingji yu zhengzhi* [World Politics and Economics] No. 10, 2001, pp. 60-65.
[84] On this change in China's foreign policy more generally, see Elizabeth Economy and Michel Oksenberg, *China Joins the World, Progress and Prospects* (Washington DC: Council on Foreign Relations, 1999).
[85] Otherwise, China would have to wait six years for that privilege. See Kent, *Beyond Compliance*, p. 71.
[86] Ibid, p. 69.
[87] Hans Blix, 'The role of the IAEA and the existing NPT regime' in Sadruddin Aga A. Khan, ed., *Nuclear War, Nuclear Proliferation, and their Consequences* (Oxford: Clarendon Press, 1986), p. 62.

decisions were significant because they signalled to the developing world that China was not going down the same path as the US or USSR.

External variables related to security, changes in the external environment and foreign pressure offer insight into China's engagement during this period. Initially, in the late 1970s, the growing Soviet threat and the superpowers' renewed arms race added a sense of urgency in Beijing and the need to develop a credible second strike force capability so that China would not remain forever open to nuclear blackmail. China also continued to assist Pakistan in nuclear technology since this served security interests by balancing India, especially after the PNE in 1974. It also helped to limit Soviet regional influence.[88] Likewise, through its involvement in the CD, China was able to follow the superpowers' more closely on matters of security concern, for instance by constraining Soviet chemical weapons capabilities in the negotiations on the Chemical Weapons Convention (CWC) at the CD.[89] Foreign pressure also incentivised the Chinese to engage with institutions in the 1980s. In this vein, the US applied significant pressure on China during the NCA negotiations.[90] Similarly, Kent refers to the Non-Aligned Movement in encouraging China to become involved in UN disarmament negotiations, playing a role in China's Foreign Minister Huang Hua's declaration to this effect on 29 May 1978.[91]

By the mid to late 1980s, the nuclear order seemed to be set on a calmer course: the USSR had declared a no-first-use policy;[92] and the US had abandoned SDI and returned to arms control, entering into INF negotiations with the USSR in 1981, resulting in the

[88] Medeiros, *Reluctant Restraint*, p. 51.
[89] Johnston, *Social States*, p. 53.
[90] Tan, 'U.S.-China Nuclear Cooperation Agreement, China's Nonproliferation Policy', p. 873; and Medeiros, *Reluctant Restraint*, pp. 37-38.
[91] Kent, *Beyond Compliance*, p.70.
[92] While the US dismissed the significance of this declaration, China, who maintained a similar policy, took the declaration more seriously. See Honor Catudal, *Soviet nuclear strategy from Stalin to Gorbachev: a revolution in Soviet military and political thinking*, (NJ: Humanities Press International, 1988), pp. 112-116; and Rong Yu and Peng Guangqian, 'Nuclear No-First-Use Revisited', *China Security*, Vol. 5, No. 1, Winter 2009, pp. 81-90.

eventual signature of that treaty in 1988. The anti-nuclear movement had also gained ground following the tragic 1986 Chernobyl nuclear accident, and was invigorated by a disarmament call made by the US and Soviet Union at the 1987 Reykjavik Summit. The environment was thus more conducive to China's engagement with nuclear order.

In addition, perhaps a 'locked-in' effect guided Chinese engagement in the 1980s. Johnston points to China's foreign policy of opening-up to international organizations and world markets including in the nuclear field, as seen by China joining the CD.[93] Through China's involvement in organizations like the CD, Beijing adopted a 'mimicking' type of behaviour to learn the language and procedures of global nuclear policymaking.[94] This experience offered a platform from which China could develop positions on a variety of issues related to weapons of mass destruction.[95] It also provided the necessary impetus to establish a professional community of experts in China, leading to the disarmament division within the Foreign Ministry. Indeed, in 1983, the Chinese defence industry set up a small arms control group to prepare the Chinese delegation to the CD on matters related to the CWC and test bans. More crucially, as a result of participation in institutions like the CD, the internal bureaucratic changes that participation required laid down important groundwork for future Chinese commitments to global nuclear order, so that, in Johnston's words, 'activity breeds activity'.[96]

However, such a view ignores the impact of China's perceptions of changes within nuclear order, such as the emergence of the CD. China was particularly keen on the unique procedural characteristics of the CD, for instance that the chairmanship would be rotated

[93] Johnston however qualifies his argument by stating that there was no solid reason why China joined the CD. See *Social States*, p. 53; and Johnston and Evans, 'China and multilateral security institutions', p. 240.
[94] Johnston, *Social States*, pp. 72-73.
[95] Kent, *Beyond Compliance*, pp. 65-75. Kent highlights this in reference to Chinese positions on the Chemical Weapons Convention and Biological Weapons Convention.
[96] Johnston and Evans, 'China and multilateral security institutions', p. 244.

among 40 members and that voting would operate according to a principle of consensus.[97] In fact, the consensus principle was deliberately designed to bring in states like China.[98] As Kent points out, for China, 'the attraction of the CD was its representativeness, its role in promoting multilateral dialogue, and its mandate to negotiate treaties'.[99] Essentially, China saw the CD in a different light to past nuclear institutions, such as the NPT, considering the former a more representative organization. In 1987, China's Foreign Minister, Wu Xueqian, made this institutional preference clear, stating: 'the Chinese government attaches great importance to the role of the Conference on Disarmament...[*it*] has changed the situation in which only a few countries monopolized disarmament negotiations and it has provided the small and medium sized countries with an important forum for participation in the settlement of disarmament questions'.[100] In the late 1990s, this view still held. In 1999, China's Ambassador for Disarmament, Li Changhe, declared that the CD was 'irreplaceable in terms of status and role'.[101] Such an explanation complements the wider argument put forward in this chapter that China, facing a nuclear order plagued by yet another arms race, this time over nuclear superiority, sought to shape that order to become more representative of its members, beyond the superpowers. China's decision to involve the UK and France in its considerations of SDI and INF, as well as the decision to label itself a middle sized nuclear power, reinforce this view.

In sum, among the variables discussed, some are primary drivers for engagement while others are secondary in their effect once engagement has been decided upon. In this regard, the primary driver for China's engagement during the late 1970s and 1980s was

[97] Medeiros, *Reluctant Restraint*, p. 213.
[98] Kent, *Beyond Compliance*, p.71.
[99] Ibid, p. 71.
[100] Wu Xueqing, at the commencement of the 1987 session of the Conference on Disarmament, CD/PV.385, 3 February 1987, quoted in Kent, *Beyond Compliance*, p.65.
[101] Li Changhe, statement at the plenary meeting of the Conference on Disarmament, 2 September 1999, http://216.109.75.135/db/china/engdocs/lich0999.htm [accessed 20 October 2011]

economic development. With the exception of China's assistance to Pakistan, the preoccupation with development had a positive impact on China's nuclear behaviour by triggering other concerns related to image and security that were well served by engagement. Indeed, once inside institutions like the CD and IAEA, China was able to monitor the superpowers on matters of security concern, such as the CWC, and more generally, use these institutions as a platform from which to advertise its positions on nuclear deterrence and disarmament. At the same time, a form of institutional pressure took hold, which, when coupled with state pressure, kept China within these institutions.

Changes in the external security environment also facilitated China's engagement. While the Soviet threat was serious in the 1970s, by the 1980s, China was experiencing a relatively calm external environment, especially in its relations with the US. More importantly, China saw important changes taking place in the institutional design of nuclear order, in particular related to the CD, which it regarded, on the basis of its operational procedures, as a special and unique nuclear institution, and thus conducive to its wider future vision of a more multilateral and representative nuclear order.

Conclusion

In conclusion, in the period of reform and opening, China engaged with the process of consolidating global nuclear order. This was a dramatic departure from past behaviour under Mao, during which China had challenged the superpowers' ideas for nuclear order and then entered into a period of isolation from emerging nuclear order. Crucially, in the post-Mao period, China engaged with global nuclear order on two fronts: first, China's search for a nuclear strategy contributed to the deterrence pillar of global nuclear order; and second, China reversed past positions on arms control and non-proliferation, and began to participate in key institutions of the nuclear order.

Under the ‘Four Modernizations’, the de-prioritisation of defence spawned several internal discussions, providing a platform from which China could formulate its first nuclear strategy, based on uncertain retaliation. This strategy came to fruition in the late 1980s following the deployment of ICBM and SLBM capabilities. Under this strategy, deterrence rested on ambiguity over the quantity of China’s nuclear forces, preventing the enemy from knowing for certain that a first strike against China would be decisive. Overall, China’s search for a nuclear strategy can be understood as part of a wider quest to become a more confident nuclear actor, no longer subject to nuclear blackmail as in the past.

At the same time, China started to engage with nuclear order by shifting its positions on arms control and proliferation. This engagement occurred at three levels. First, China actively signed up to core institutions of global nuclear order such as the CD and the IAEA. Second, China indirectly sought to influence the superpowers regarding negotiations towards an INF treaty as well as discussions on SDI. Finally, China began, however tentatively, to develop in-house expertise on nuclear issues. However, China’s actions were contradictory during this period. Beijing engaged in pro-proliferation activities with Pakistan and in 1988 imposed harsh conditions for disarmament. That China’s engagement was cautious and at times contradictory is unsurprising. China was constrained by domestic political struggles, for instance limiting the degree to which it could join in the NPT process; while economic pressures and security concerns often underpinned its decision to transfer sensitive technology. Crucially, however, China’s aberrant nuclear behaviour was no longer, as in the past, a deliberate subversion or rejection of nuclear order. Instead, in a dramatic departure from past behaviour, China’s engagement signalled validation of the existing nuclear order.

What did the above mean for nuclear order? China’s search for a nuclear strategy in the reform period had both positive and negative implications for nuclear order. On the

one hand, despite China's rejection of deterrence in declaratory policy, uncertain retaliation reinforced strategic stability because it did not threaten to upset the current deterrent relationships in the nuclear order, namely MAD between the superpowers. Uncertain retaliation also contributed to wider thinking on deterrence because it provided an alternative to notions of assured destruction and nuclear superiority. On the other hand, if uncertain retaliation was simply a transitory strategy and China did indeed seek something close to nuclear equality with the superpowers, then a shift towards warfighting in strategy would likely be destabilising for global nuclear order. Chari elaborates on this, envisioning a future nuclear order based on a 'tripolar nuclear arrangement' between the US, the USSR and China.[102] Similarly, for Leo Yueh-Yun Liu, a 'tripolar nuclear balance' would be inherently destabilising, potentially leading to a new arms race since the superpowers would be unwilling to concede nuclear parity to China, let alone nuclear supremacy.[103]

For its part, China's engagement had several implications for nuclear order. Above all, China's engagement validated the nuclear order. Joining the CD and IAEA were powerful signals in this respect. Second, China signalled its desire to re-orientate the nuclear order away from the superpower quest for nuclear supremacy by carving a greater role for middle sized nuclear powers, including China. China's frequent reference to the UK and France in its deliberations over the INF treaty and SDI underpin this desire. However, such an approach had uncertain implications for nuclear order. As Segal argued, China's nuclear forces 'complicated superpower arms control'.[104] In fact, during the INF talks, the USSR sought to involve China, the UK and France. However, China recoiled from any suggestion of direct participation, on the basis that as a middle sized nuclear

[102] P.R. Chari, 'China's Nuclear Posture: An Evaluation', *Asian Survey*, Vol. 18, No.8, 1978, pp. 824-5
[103] Leo Yueh-Yun Liu, *China as a nuclear power in world politics* (London: Macmillan, 1972), p. 20.
[104] Gerald Segal, 'As China grows strong', *International Affairs*, Vol. 64, No. 2, 1988, p. 226.

power it had different responsibilities and expectations to the US and the Soviet Union. This distinction enabled China to remain outside of arms control as well as disarmament negotiations, where China imposed harsh conditions for the superpowers before it would enter into any negotiations. Thus, China's engagement posed an important challenge for nuclear order: how to better accommodate and manage different sized nuclear actors, beyond simply the superpowers, into the nuclear order.

Together, China's pursuit of a nuclear strategy and its decision to engage with nuclear institutions underpin a subtle underlying goal in China's approach to global nuclear order during this period, namely, to ensure that the nuclear order did not end as it started out in the late 1970s and 1980s: with the superpowers' quest for nuclear supremacy over one another. China's decision to pursue a minimalist strategy and to engage, albeit cautiously and in a somewhat contradictory fashion with the arms control and non-proliferation pillars of nuclear order is reflective of China's efforts in this regard. China also adopted the title of a middle-sized nuclear power, comparing itself to the UK and France. In essence, China favoured a future nuclear order that was more representative, reflecting the concerns and strategic needs of not just the superpowers, but middle-sized nuclear powers as well. Whether China succeeded in realising such a vision for global nuclear order is the subject of the next chapter.

Chapter Five
China and the consolidation of nuclear order in the 1990s

In the 1990s, with the passing of the Cold War, what shape did the global nuclear order take? Did it become, as China had hoped in the 1980s, a more representative order? Would China continue to engage with institutional aspects of nuclear order, and would uncertain retaliation remain the basis of its nuclear weapons strategy? In addressing these questions, this chapter is divided into four sections. The first section outlines global nuclear developments in the early 1990s, following the dissolution of the Soviet Union, and the impact of these developments on Chinese nuclear thinking. The second section focuses on China's efforts to modernise its nuclear force and bolster the credibility of its deterrent, as well as the continuation of internal discussions related to nuclear deterrence. The third section examines Chinese engagement with the non-proliferation and arms control pillars of nuclear order, in particular Beijing's decision to join the Non Proliferation Treaty (NPT) in 1992 and sign the Comprehensive Test Ban Treaty (CTBT) in 1996. The final section turns to China's interpretation of global nuclear events in the late 1990s, such as changes in US nuclear weapons strategy and the nuclear tests conducted in 1998 by India and Pakistan, navigating the nuclear order away from the more positive developments in arms control and non-proliferation that had defined the decade.

Overall, this chapter argues that, following a number of positive developments in the early to mid 1990s, such as the expansion of the NPT and emergence of the CTBT, the arms control and non-proliferation pillars of nuclear order entered into a period of consolidation. China seized this opportunity to promote a more multilateral and representative order and secure its stake in such an order as a credible and legitimate nuclear weapons state. China set to this task in two main ways. First, China's military

modernization process and debates regarding nuclear strategy challenged the deterrence pillar of nuclear order. Second, China joined important nuclear institutions, such as the NPT, reinforcing the non-proliferation pillar of nuclear order, at the same time enhancing its own image. However, in the late 1990s, with changes afoot in the external security environment, the future direction of global nuclear order was cast into doubt, and there was a sense in China that the very order it had finally signed up for seemed to be in the process of unravelling.

New Global Nuclear Developments

In the early post-Cold War era, President Bush declared that a 'new world order' had arrived.[1] In this new order, China announced that it wanted to be recognised more widely as a 'responsible major power'.[2] However, China faced an uncertain strategic environment, complicating that task.

Most notably, in December 1991, the Soviet Union disintegrated into fifteen newly independent states, introducing important new dynamics into the nuclear order. [3] The first of these dynamics was the end of superpower nuclear rivalry and the arms race that had dominated the Cold War period. Now the US would unquestionably lead on matters related to nuclear order. A second dynamic emerged with the Soviet strategic nuclear arsenal being scattered across Russia, Ukraine, Belarus and Kazakhstan, compounding fears regarding nuclear safety and security. [4] This new reality transformed the US-Russian nuclear relationship: it would no longer be based solely on Mutual Assured Destruction

[1] *The Economist*, 'New World Order Inc.', 10 November 1990.
[2] A goal consistently promoted throughout the 1990s by China's Foreign Minister Qian Qichen.
[3] International Institute for Strategic Studies (IISS), *The Military Balance 1991-1992* (London: IISS, 1991-1992). See also Zhong Jing and Pan Zhenqiang, 'Redefining strategic stability in a changing world: A Chinese view' in Ian R. Kenyon and John Simpson, eds., *Deterrence and the New Global Security Environment* (Oxford: Taylor and Francis, 2006), pp. 114-126; Li Weiguo, 'new issues in the readjustment of nuclear strategies and nuclear disarmament', *Guoji wenti yanjiu*, 13 July 1992, pp. 42-47, FBIS-CHI-92-150; and David Shambaugh, 'China's Security Policy in the Post-Cold War Era', *Survival*, Vol. 34, No. 2, 1992, pp. 88-106.
[4] Graham Allison, et al., *Avoiding Nuclear Anarchy: Containing the Threat of Russian Loose Nuclear Weapons and Fissile Material* (Cambridge: MIT Press, 1996), pp.74-201.

(MAD) but also on Mutual Assured Safety (MAS). [5] To deal with this new challenge, the Cooperative Threat Reduction Program was launched by the US in 1991, and by 1996, all three former Soviet republics were de-nuclearised. A related third important dynamic was the emphasis placed in Washington and Moscow on non-proliferation and arms control. This focus arguably aided the organizational and institutional development of nuclear order, paving the way for a plethora of arms control and non-proliferation initiatives during this period. [6] Both the US and Russia recognized that the vast nuclear arsenals they had amassed in the cold war period represented overkill and were no longer necessary. Ambitious proposals were put forward, such as the Butler proposal, which called for drastic reductions on both sides down to 200 nuclear weapons. [7] This proposal was ultimately rejected but other positive initiatives were taken by both countries: START I talks were accelerated, a testing moratorium was established, production of new nuclear weapons halted, and in 1994, both states agreed to re-target their nuclear weapons away from each other towards the Atlantic Ocean. [8] Beyond US-Russian efforts, in 1993 a programme was initiated to strengthen IAEA safeguards[9] --what would later become the Additional Protocol in 1997-- and in 1995, the NPT was granted indefinite extension. During this period, membership of the NPT multiplied: in 1991, South Africa unilaterally gave up its nuclear programme and joined the NPT, and France announced that it too would join the NPT.

[5] William Perry, 'Pursuing a Strategy of Mutual Assured Safety', remarks delivered by then US secretary of defence at the National Press Club, Washington D.C., 5 January 1995.
[6] Gilles Andreani, 'The Disarray of US Non-Proliferation Policy', *Survival*, Vol. 41, No. 4, 1998, pp.42-61.
[7] Kathryn R. Schultz, 'US Nuclear Posture and Doctrine since the end of the Cold War', *Center for Defense Information*, 4 December 1996, http://www.cdi.org/nuclear/Berkrs96.html [accessed 22/05/03]
[8] Edward Warner III, 'Nuclear Deterrence Force still Essential', statement by US assistant secretary of defense for strategy and threat reduction, Senate Armed Services Committee, Washington D.C., 31 March 1998.
[9] Nuclear activities in Iraq in the early 1990s provided impetus for an improved system of nuclear safeguards and forensics, see William Walker, *A Perpetual Menace: Nuclear Weapons and International Order* (London: Routledge, 2011), pp.112-117.

These dynamics had both positive and negative implications for China. On the one hand, the nuclear order was no longer dominated by superpower rivalry but was instead focused on arms control and non-proliferation, and major institutions, such as the NPT, had grown in membership. These changes complemented China's desire for a more multilateral nuclear order.[10] On the other hand, heightened concern over nuclear proliferation highlighted discrepancies in more covert aspects of Chinese nuclear behaviour. More specifically, in this period, the US accused China of the transfer of nuclear weapons, and cruise and ballistic missile technology to Iran, Iraq, Saudi Arabia, Pakistan, Syria and Algeria.[11] In 1991, President Bush imposed restrictions on high speed computer exports and satellite parts to China and in 1993, President Clinton sanctioned Chinese companies for exporting missile related technology. Then, in 1995, it emerged that the China Nuclear Energy Industry Corporation had sold ring magnets –an important component in gas centrifuges used to enrich uranium-- to Pakistan. This represented a serious case of proliferation but the Chinese government made clear that the magnets had not been magnetized. Furthermore, the deal been done without government knowledge, and the items, despite being dual-use, were not on international trigger control lists.[12] Nevertheless, these developments --together with positive Russian and American efforts in arms control-- arguably made China, a country outside of the NPT and with an

[10] Yao Zhang, 'Mei E hecaijun jianyi pinxi' [Analysis of the US-Russian nuclear disarmament proposals] *Guoji zhanwang* [World Outlook], May 1992, pp. 4-5; and Li Daozhong, 'Bushi zhizheng hou de dongxi fangjunkong yu caijun xingshi' [Bush came to power East-West arms control and disarmament situation] *Shijie jingji yu zhengzhi* [World Economics and Politics] August 1990, pp. 49-50.
[11] Evan Medeiros, *Reluctant Restraint: The Evolution of China's Nonproliferation Policies and Practices, 1980-2004* (Stanford: Stanford University Press, 2007), pp.30-88. See also IISS, *Military Balance 1991-1992*, p. 149.
[12] Medeiros, *Reluctant Restraint*, p. 66. Other suspected incidents included a suspected industrial furnace to an unsafeguarded facility in 1996. See William Burr, 'China, Pakistan, and the Bomb: The Declassified File on U.S. Policy 1977-1997', National Security Archive Electronic Briefing Book No. 114, 5 March 2004, http://www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB114/index.htm [accessed 20 May 2011] and Medeiros, *Reluctant Restraint*, pp. 65-71.

international image already tarnished by its handling of the Tiananmen incident in 1989, look like an irresponsible nuclear weapons state.

Other external developments challenged Chinese nuclear thinking, such as the 1990-1991 Persian Gulf War, which illustrated China's relative military weakness. As Manning et al. argue, the weapons used in this war demonstrated 'conventional counterforce attack capabilities that conceivably enable other countries to conduct a first strike on China's nuclear forces…without risking a nuclear war'.[13] Mark Stokes adds that the Persian Gulf War was a 'rude awakening for the CMC [Chinese Military Commission] and the military-industrial complex highlighting the gap in military capabilities between China and the US.'[14] This gap was most prominent in terms of air power, long range precision strike capabilities and information based warfare.[15] Such advanced US conventional weaponry seemingly undermined China's nuclear strategy of uncertain retaliation, developed in the 1980s, since this was based on deterring a nuclear, rather than conventional, first strike. China had no conventional weapons to match the power of its nuclear deterrent and, therefore, in retaliation for a conventional attack, might actually violate China's pledge of no-first-use (NFU).

To complicate matters, although China's nuclear relations with Russia had improved drastically during this period --indeed by 1994, both had signed a mutual NFU and de-alerting agreement--[16] China's relations with the US were less certain.[17] In particular, China feared that the US had replaced the Soviet threat with a new threat:

[13] Robert A. Manning, Ronald Montaperto and Brad Roberts, *China, nuclear weapons and arms control: a preliminary assessment* (National Defense University and the Institute of Defense Analyses, 2001), pp. 3-4.
[14] Mark Stokes,'China's Strategic Modernization: Implications for the US,' Strategic Studies Institute, September 1999, p. 12.
[15] Quoted in Alastair I. Johnston, 'China's New "Old Thinking": The Concept of Limited Deterrence', *International Security*, Vol. 20, No.3, Winter 1995/96, p. 14.
[16] This agreement was likely important to China because Russia abandoned its blanket NFU pledge in 1993.
[17] *Xinhua*, 'Text of Sino-Russian Nuclear Policy Declaration', 6 June 1994, FBIS-CHI-94-172.

China.[18] It is in this light that the Chinese interpreted the 1995 US Nuclear Posture Review, which introduced a new nuclear strategy: 'Lead and Hedge'.[19] The lead element would focus on preserving US unipolar power. The hedge element would act as a kind of insurance policy should nuclear relationships ever turn sour.

In sum, following the end of the Cold War, the superpower rivalry and arms races that had defined global nuclear order no longer held that order hostage, reducing the likelihood of nuclear war. Instead, shared concerns over nuclear safety and security placed arms control and non-proliferation at the top of security agendas in Washington and Moscow. With the expansion of the NPT, the nuclear order was also starting to look more representative of its members, both nuclear and non-nuclear alike. For China, this turn of events arguably represented an ideal environment in which to realise a more representative nuclear order. However, these developments cast suspected Chinese proliferation practices in a harsh light. China also feared that perhaps the US had substituted the former USSR with China as its main security threat. In dealing with these changes, China suffered deficits in both its security and image. To compensate, China adopted a two-track strategy.[20] First, Beijing sought to bolster the credibility of its nuclear deterrent by modernising its nuclear arsenal and improving its nuclear weapons strategy. Such a focus would address deficits to its security. Second, to enhance its international legitimacy, China continued to engage with institutional aspects of the nuclear order, adopting multilateral approaches to arms control and non-proliferation.

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[18] Zhao Zhiyu, 'Kelindun zhengfu zai he wenti shandg de zhengce quxiang' [The Clinton Administration on the nuclear issues], *Shijie jingji yu zhengzhi* [World Economics and Politics] No. 10, 1994, pp. 62-63; and Qiu Yonigzheng and Lu Zhao Yan, 'Meiguo bing wei fangqi he da bang' [United States did not abandon its nuclear stick] *Jiefangjun Bao* [PLA Daily], 25 May 1995.

[19] US Department of Defense, Nuclear Posture Review 1995, http://www.nukestrat.com/us/reviews/dodnprslides092294.pdf [accessed 20 January 2010]

[20] This reflects similar analysis by Yan Xuetong in 'Lengzhan hou Zhongguo de duiwai anquan zhanlue' [China: external security strategy after the Cold War], *Xiandai guoji guanxi* [Contemporary International Relations], No. 8, 1995, pp. 23-28. According to Yan, China has adopted a three-in-one defensive security policy consisting of defence modernization, regional security cooperation and the establishment of a 'good neighbourhood', p. 24.

The Search for Credibility: Military Modernization and Debates on Strategy

In the context of the challenges highlighted above, most notably the lessons learned in Beijing from the 1991 Iraq war, Chinese military modernization was perceived in Beijing as both necessary and urgent.[21] In August 1993, the Vice Chairman of the Chinese Military Commission, Liu Huaqing, issued the 'Strategic Guideline of the New Era' noting the changed strategic environment and China's outdated military systems.[22] According to these guidelines, military modernization would reflect the Revolution in Military Affairs (RMA) to deter and if necessary win conventional limited wars.[23] This meant the prioritisation of non-nuclear deterrence and the development of smart conventional missiles, even converting some nuclear missiles for conventional use, like the DF-21 and DF-25 Intermediate Range Ballistic Missile (IRBM).[24] In other words, China would continue down a path initiated in the 1970s and 1980s: de-emphasising nuclear weapons in its overall defence plans.

However, this de-emphasis did not mean that China would abandon the pursuit of a credible second strike retaliatory based nuclear force. Under modernization plans, nuclear weapons systems would be upgraded improving yield, safety, accuracy and range. Plans centred around two strategic weapons systems: the mobile Intercontinental Ballistic Missile (ICBM) DF-31 and JL-2 Submarine Launched Ballistic Missile (SLBM); four

[21] This is the opinion of China's leading nuclear weapons scientists: Wu Jun, Sun Xiangli and Hu Side in 'The Impact of Revolution in Military Affairs on China's Defence Policy', Institute of Applied Physics and Computational Mathematics, 2003, http://www.lincei.it/rapporti/amaldi/papers/XV-WuRMAImpact.pdf [accessed 20 April 2011]; and Dean Cheng, 'Chinese Lessons from the Gulf Wars' in Andrew Scobell, David Lai and Roy Kamphausen, eds., *Chinese Lessons from Other People's Wars* (Carlisle, Pennsylvania: Strategic Studies Institute, 2011), pp. 153-201.

[22] Ehsan Ahrari, 'China Changes its Strategic Mindset- part one', *Jane's Intelligence Review*, November 1999, pp. 39-44; Chu Shulong, 'The PRC girds for limited, high-tech war', *Orbis*, Vol. 38, No. 2, Spring 1994, p. 148; J. M. Malik, 'China's Policy Towards Nuclear Arms Control In The Post-Cold War Era', *Contemporary Security Policy*, 1996, p. 13; and Ji You, 'The Revolution in Military Affairs and the evolution of China's strategic thinking', *Contemporary Southeast Asia*, Vol. 21, No. 3, 1999, p. 353.

[23] For more, see Eliot A. Cohen, 'A Revolution in Warfare', *Foreign Affairs*, Vol. 75, No. 2, 1996, pp. 37-54.

[24] Ji You, 'Nuclear Power in the Post-Cold War Era: the development of China's nuclear strategy', *Comparative Strategy*, Vol. 18, 1999, pp. 245-259.

shorter range weapons systems DF-25, DF-15, DF -11 and DF 8610; and a new fighter bomber, the H-7 supersonic fighter, with the potential for a tactical and uncertain nuclear role. Of these systems, the DF-31 and JL-2 represented the most potent nuclear weapons systems. The DF-31 was particularly important since it would introduce mobility into China's nuclear arsenal -- until then all China's nuclear ICBMs were fixed and silo based. To realise these plans, China also embarked on an intensive testing programme to improve nuclear designs and safety.[25] In addition to tests, in 1995 the Second Artillery Corps (SAC) completed a major construction project of caves and tunnelling to improve the survivability of China's nuclear forces.[26] Earlier that decade, the SAC mission was extended to include not just nuclear but conventional strategic missiles as well. SAC commanders had long complained that, given the low reliance on nuclear weapons in overall defence policy, as a nuclear-only unit they had felt redundant and ignored.[27]

In parallel with the modernization process, internal discussions of nuclear strategy that began in the period of reform and opening up continued into the 1990s. In these debates, discussions centred around declared positions on nuclear deterrence. In the past, China had eschewed any mention of the term since a direct translation of nuclear deterrence *heweishe*（核威慑）had offensive connotations, and was thus deemed ill-suited to the Chinese self-defensive pledge of NFU. However, in the post-cold war environment, the Chinese argument against nuclear deterrence changed: China was now opposed to nuclear deterrence 'based on first use', distinguishing it from China's nuclear policy, based on NFU. Deterrence was also considered out of date, with Senior Chinese officials denouncing the term as a vestige of the cold war. In this vein, in 1995 according to the

[25] Vipin Gupta,'The Status of Chinese Nuclear Weapon Testing' *Jane's Intelligence Review*, January 1994, pp. 31-35. In total, China conducted 11 underground nuclear tests between 1990 and 1996.
[26] Jeffrey Lewis, *The Minimum Means of Reprisal: China's search for security in the nuclear age* (Cambridge: Massachusetts: American Academy of Arts and Science, 2007), p. 33.
[27] Author interview, Beijing, 1 July 2011 (No. 61).

Ambassador for disarmament, Sha Zukang, 'though the Cold War has already come to an end, some countries are still adhering to the policy of nuclear deterrence based on the first use of nuclear weapons…the nuclear-weapon states concerned should abandon their policy of nuclear deterrence'. [28] This position was reiterated by Chinese Foreign Minister Qian Qichen at the 1996 NPT review conference, stating 'China does not endorse the policy of nuclear deterrence'.[29]

However, by the late 1990s, Chinese officials, including President Jiang Zemin, began to use the term nuclear deterrence in a neutral way, and it almost made it into China's first defence white paper released in 1998, laying the groundwork for future change on this issue.[30] In explaining this change, Chinese academics argued that the West had distorted the idea of nuclear deterrence, conflating it with MAD.[31] In this light, the Chinese debate of the 1990s sought to 'strip away' negative connotations, since only then could China openly and officially embrace deterrence in its purer form. [32] Another explanation is that the debate was part of a learning process that began in the 1980s, since nuclear deterrence was widely misunderstood in China. [33]

Beyond internal debates, China's NFU pledge came under the international spotlight following personal comments made in 1995 by PLA General Xiong Guangkai

[28] Sha Zukang, Chinese Disarmament Ambassador, statement at the General Debate of the First Committee of the 50th Session of the UN General Assembly, 17 October 1995.
[29] Qian Qichen, statement at the 51st Session of the United Nations General Assembly, 25 September 1996.
[30] This was confirmed in an interview, Beijing, 16 June 2011 (No. 29).
[31] See Li Zhengxin, 'Shi lun he weishe lilun', [On the Western theory of nuclear deterrence], *Xiandai guoji guanxi* [Contemporary International Relations] No.1, 1990, pp. 51-55; Wang Zongchun, *He guojia de hewuqi yu he zhanlue yanjiu* [Nuclear weapons states, nuclear weapons and strategic research], PhD thesis, Central Party School of CCP in Beijing, 2000; Mei Tianjing, 'He weishe yu he zhanzheng' [Nuclear deterrence and nuclear war] *Waijiao xuexiao xuebao*, [Foreign Affairs College], No. 4, 1997, pp. 91-94; and Huang Jin, 'Lun heweishe yu dangdaishijie geju' [Theory of nuclear deterrence and the contemporary world order] *Nanjing shida xue bao* [Journal of Nanjing Normal University] No.4, 1992, pp. 33-38.
[32] Author interview, Beijing, 1 July 2011 (No. 61).
[33] Author interviews, Beijing, 15 July 2011 (No. 53) and 22 July 2011 (No. 24). One of the first western books on nuclear strategy to be translated into Chinese, in 1990, was Lawrence Freedman's *The Evolution of Nuclear Strategy*. Another popular book translated into Chinese was *The Absolute Weapon* co-edited by Bernard Brodie. Reappraisal of traditional Chinese strategic thought also continued in this period. Sun Tzu was the subject of several PLA conferences in the 1990s, as well as work by noted Chinese arms control expert Liu Huaqiu.

and a year later by Chinese disarmament ambassador Sha Zukang, as to whether NFU would apply to Taiwan. PLA General Xiong Guangkai's comments were initially interpreted by Western media as a threat to use nuclear weapons against Los Angeles. However, according to a US diplomat present at the meeting, Charles Freeman, General Xiong had been misquoted. The General's comment was in-line with NFU: 'You [*US*] do not have the strategic leverage that you had in the 1950's when you threatened nuclear strikes on us. You were able to do that because we could not hit back. But if you hit us now, we can hit back. So you will not make those threats. In the end you care more about Los Angeles than you do about Taipei'.[34] Sha Zukang, however, was not misquoted. In the 1996 *Newsweek* article, Sha was clear: 'Taiwan was a province of China, not a state. So the policy of no-first-use [*of nuclear weapons*] does not apply'.[35] Although this statement was later repudiated by the Chinese Foreign Ministry and withdrawn by Sha, who is well-known for his outlandish character,[36] the comments were nevertheless alarming because they were made soon after the 1995/6 Taiwan Straits crisis, during which China conducted provocative conventional missile exercises close to Taiwan.[37]

Western analysis of these remarks has suggested that perhaps this was the sign they had been waiting for: an indication that uncertain retaliation was simply a transitory nuclear strategy and in fact China's true strategic intentions conformed to more aggressive war-fighting principles.[38] However, in the 1990s China has stood by its NFU pledge, publicly affirming its commitment to NFU in 1995 by issuing an unconditional Negative

[34] Ambassador Charles Freeman, 'Did China threaten to bomb Los Angeles?' *Proliferation Brief*, Vol. 4, No. 4, 22 March 2001.
[35] Quoted in 'Interview: Beijing's Last Blast?', *Newsweek*, 12 August 1996, p. 58.
[36] Tsung Tao-yi, 'Interview with Sha Zukang Dir-Gen Arms Control', *Hong Kong Ching Pao*, 1 September 1999, FBIS FTS19991912001110.
[37] Robert Ross, 'The 1995-1996 Taiwan Strait Confrontation: Coercion, Credibility, and Use of Force', *International Security*, Vol. 25, No. 2, Fall 2000, pp.87-123.
[38] For analysis of this viewpoint, see Stephanie Lieggi, 'Going beyond the Stir: The Strategic Realities of China's No-First-Use Policy', Center for Nonproliferation Studies, 2005 http://www.nti.org/e_research/e3_70.html [accessed 2 October 2011].

Security Assurance (NSA), according to which 'China undertakes not to use or threaten to use nuclear weapons against non-nuclear-weapon states or nuclear-weapon-free zones at any time or under any circumstances'.[39] This assurance was then reiterated in 1996 and 1999 specifically in relation to Taiwan.[40]

Despite these efforts, suspicions remained throughout the 1990s, fuelled by a wider school of thinking at this time known as the China Threat Theory School.[41] This resulted in a plethora of foreign studies focused on categorising the type of nuclear deterrence underpinning China's nuclear strategy --for instance whether it fit into the frameworks of minimal or limited deterrence-- the latter indicative of a war-fighting strategy. These studies pointed to work at that time by Chinese academics Wang Pufeng and Guo Shanyi, which called for a greater shift in Chinese nuclear weapons strategy: minimal deterrence at strategic level but limited deterrence at a tactical level.[42] Uncertain retaliation was heavily criticised for being outdated and one-dimensional, 'not applicable to any foreseeable scenarios of nuclear or conventional war'.[43] Although China, it was argued, should not seek nuclear parity with the US it should develop a stronger, more visible deterrent based on smaller and more accurate ICBMs, SLBMs, tactical nuclear

[39]Government of the People's Republic of China, China's National Statement on Security Assurances, 5 April 1995, http://www.reachingcriticalwill.org/resources/S1995-265.pdf [accessed 20 March 2011]
[40] 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]; and 'Zhongguo daibiao tuanxiang bukuosan hewuqi tiaoyue 2000 nian shenyi dahui de yi weiyuanhui tijiao de gongzuo wenjian' [Working Paper Submitted by China, 2000 NPT Review Conference] 1 May 2000, http://216.109.75.135/db/china/chindocs/zcnpt500.htm [accessed 20 October 2011]
[41] For assessments of the China threat theory see: Alastair I. Johnston, 'China's International Relations: the Political and Security Dimensions' in Samuel Kim, *The International Relations of Northeast Asia* (Lanham, Md.: Rowman & Littlefield, 2004), pp. 65-100; Barry Buzan and Rosemary Foot, *Does China Matter? A Reassessment: essays in memory of Gerald Segal* (London: Routledge, 2004); and Michael Brown, ed., *The Rise of China: An International Security Reader* (Cambridge: MIT University Press, 2000).
[42] For details on these views, see Johnston, 'China's New "Old Thinking"', p. 13, ft.26.
[43] Ji You, 'Nuclear Power in the Post-Cold War Era', p. 246.

weapons, ballistic missile defence, space based early warning systems and anti-satellite technology.[44]

However, these views did not represent the majority of Chinese analysts, and most certainly not official policy in Beijing.[45] Official statements continued to place an emphasis on retaliation, limited development and self-defence in nuclear strategy. As Sha Zukang stated in 1997, 'China's very limited nuclear force is for the sole purpose of self-defense… countering nuclear blackmail…and ultimately eliminating nuclear weapons'. [46] This complemented respective analysis by Chinese academics Han Hongxin, Wu Zhan and He Zuoxiu, who argued for a strategy based on assured, rather than uncertain, retaliation.[47] According to this view, China's nuclear forces need only be limited and missiles should be solid-fuelled, hardened, mobile and more accurate. Survivability was the key goal. In contrast, a war-fighting strategy demanded a sharp shift in Chinese strategy, with potentially negative implications for foreign relations with nuclear and non-nuclear states. In addition, if war-fighting was the guide for modernization there was a lot of work to do. As yet the PLA had none of the systems required for such a strategy.[48]

In summary, in the 1990s, China focused on modernising its nuclear arsenal beyond the basic capabilities deployed in the 1980s so as to secure a credible second strike force. Internal discussions on strategy from the 1980s carried over into the 1990s. In these discussions, the policy of denouncing nuclear deterrence was re-considered, paving the way for its embrace in future declaratory policy. Discussions also broadly outlined two

[44] Johnston, 'China's New "Old Thinking"', pp. 31-33. Major General Yang Huan, 'China's Strategic Nuclear Weapons' in Michael Pillsbury, eds., *Chinese Views of Future Warfare* (Washington: National Defense University press, 1998). p.36.
[45] Hua Hongxun, 'China's Strategic Missile Programs: Limited Aims, not Limited Deterrence', *The Nonproliferation Review*, Winter 1998, pp. 60-68.
[46] Sha Zukang, 'Statement at the First Session of the Preparatory Committee for the 2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons', 8 April 1997.
[47] Hua,'China's Strategic Missile Programs', pp. 60-68. For details on Wu and He, see Mel Gurtov and Byong-Moo Hwang, *China's Security: the new roles of the military* (London: Lynne Rienner, 1998), p. 126.
[48] Alastair I. Johnston, 'Prospects for Chinese Nuclear Force Modernization: Limited Deterrence versus Multilateral Arms Control', *The China Quarterly*, No. 146, June 1996, p. 560.

alternative nuclear strategies for China beyond uncertain retaliation: assured retaliation or war-fighting, but of the two, assured retaliation reflected the official line. In addition, in the mid 1990s, doubts started to emerge over NFU following provocative personal remarks made by senior Chinese officials. However, rather than abandon NFU, China strengthened its official commitment to this pledge.

Engagement with Institutional Aspects of Global Nuclear Order

Where China saw, in military modernization, a way to secure its credibility as a nuclear weapons state, multilateral approaches to arms control and non-proliferation would give China a legitimate seat at the table and complemented its vision of a more representative order. More generally, such an approach served to reinforce goals set out in the New Security Concept elaborated in 1996/7, [49] which sought to counter negative aspects of the 'rise of China' debate, the latter bolstered by China's aforementioned military exercises near Taiwan from 1995 to 1996.

China began by sending a delegation to observe the 1990 NPT review conference. At that conference, Hou Zhitong, head of the Chinese delegation, announced that 'China seeks a policy of not to encourage or engage in nuclear proliferation and not to help any country develop the deadly weapons'.[50] Various studies were commissioned by China's Foreign Ministry on the value of joining the NPT.[51] In the end, the Chinese leadership concluded that there was no reason not to join the treaty. Thus, in a state visit to Japan in August 1991, China announced its plans to join the NPT and less than a year later, in

[49] Li Qinggong and Wei Wei, 'Chinese Army paper on 'New Security Concept' *Jiefangjun Bao*, 24 December 1997, FBIS-CHI-98-015; and Permanent Mission of the PRC to the United Nations, 'China's Position Paper on the New Security Concept', 16 April 2004.

[50] Shen Dingli, 'Toward a nuclear weapon-free world: a Chinese perspective', *Bulletin of the Atomic Scientists*, Vol. 50, Issue 2, March/April 1994, p. 51; *Xinhua*, 'Prevention of nuclear proliferation stressed', 12 September 1990, FBIS-CHI-90-177; and Zou Yunhua, 'Nonproliferation of nuclear weapons- an observation on the eve of the 4th review conference of signatory states to the treaty on the nonproliferation of nuclear weapons', *Guoji wenti yanjiu*, 13 July 1990, FBIS-CHI-90-163.

[51] Author interview, Beijing, 30 October 2010 and 13 June 2011 (No. 35).

March 1992, China acceded to the Non-Proliferation Treaty (NPT) as an internationally recognized nuclear weapons state, having conducted a nuclear test prior to the 1967 NPT cut-off date.

Beyond the NPT, China heavily campaigned for a NFU treaty,[52] submitting a formal draft of an international NFU treaty to the UN General Assembly in 1994.[53] China also pledged early-on its support for the successful conclusion of a CTBT. In 1990, at a plenary session at the Conference on Disarmament, China's Foreign Minister, Qian Qichen, stated that 'the Chinese delegation is ready to join in the work of the ad hoc committee on a nuclear test ban as soon as it is established by the CD'.[54] This was echoed by the Chinese government in an official statement on nuclear testing in 1993 that 'after a Comprehensive Test Ban Treaty is concluded and comes into effect, China will abide by it and carry out no more nuclear tests'.[55] Then, in 1994, US Secretary of State Warren Christopher and Chinese Foreign Minister Qian issued a joint statement to curb proliferation and 'work together to promote a global and verifiable ban on the production of fissile materials for nuclear weapons and other nuclear explosive devices'.[56] That same year, China entered into a de-targeting agreement with Russia.[57] In addition, by 1995, China had outlined its support for the indefinite extension of the NPT, helped facilitate acceptance of the Agreed

[52] Author interview, Monterey, 6 December 2011 (No. 34); and Basic Position Paper Presented by China at the Fourth Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, 11 September 1990 http://www.nti.org/db/china/engdocs/npt0990.htm [accessed 12 March 2011]
[53] A number of high profile Chinese nuclear analysts have written on this issue, see Liu Huaqiu (director of the Program on Arms Control and Disarmament at the China Defense Science and Technology Information Center, CDSTIC), 'Next Steps: beyond the CTBT' at the INESAP conference in Shanghai, 8-10 September 1997; Zeng Wenping (IAPCM), 'Verifiability of No-First-Use Treaty', at the INESAP conference in Shanghai, 8-10 September 1997; Wu Jun (IAPCM), 'On No-First-Use Treaty', paper at the Sixth ISODARCO Beijing Seminar on Arms Control, 29 Oct-1 Nov 1998, Shanghai, China; and Rong Yu and Peng Guangqian, 'Nuclear No-First-Use Revisited', *China Security*, Vol. 5, No. 1, Winter 2009, pp. 81-90.
[54] Government of the People's Republic of China, plenary statement to the Conference on Disarmament, 27 February 1990.
[55] Government of the People's Republic of China, statement on the Question of Nuclear Testing, 5 October 1993, http://216.109.75.135/db/china/engdocs/ctbt1093.htm [accessed 15 April 2009]
[56] US Department of State Dispatch, 'The US-China: Curbing missile and nuclear weapons proliferation', 17 October 1994, http://www.fas.org/nuke/control/mtcr/news/941017-390284.htm [accessed 20 June 2008]
[57] *Xinhua*, 'Text of Sino-Russian Nuclear Policy Declaration', 6 June 1994, FBIS-CHI-94-172.

Framework to resolve the North Korean nuclear crisis, and signed security assurances in Eurasia.[58] Then, in November of that year China released its first white paper on arms control and disarmament.[59]

In the second half of the 1990s, Chinese engagement gained even more pace, as arms control institutions and export control regulations in China multiplied. For instance, in 1997, the Department for Arms Control and Disarmament was launched within the Ministry of Foreign Affairs.[60] Significant cooperation also took place between the US and China, with successful presidential summits in 1997 and 1998, as well as the initiation of a number of nuclear related bilateral dialogues and exchanges, such as the State Department's *Nonproliferation Dialogue*, which discussed the transfer of Chinese dual-use technology to countries like Iran and Pakistan, and the US-China 'Lab-to-Lab' technical exchange programme, active between 1995 and 1999.[61] China's treaty and regime commitments also increased. In 1996, China announced a national moratorium on all forms of nuclear testing,[62] signed the CTBT[63] and pledged not to transfer nuclear technology to unsafeguarded facilities. A year later, China pledged to end transfers of contentious dual-use technology to Iran, issued two sets of legislation on export controls,[64] joined the Zangger Committee, and announced its support for the Fissile Missile Cut-off

[58] *Xinhua*, 'Envoy strongly appeals for 'No-First-Use' treaty', 18 October 1995, FBIS-CHI-95-201.
[59] Information Office of the State Council of the People's Republic of China, *White Paper: China: Arms Control and Disarmament*, November 1995.
[60] Author interview, Beijing, 20 July 2011 (No. 34).
[61] Author interviews, Washington DC, 14 June 2010 (No. 48), 21 June 2010 (No. 39), 21 March 2011 (No. 13) and 1 April 2011 (No. 11) and in San Diego, 2 August 2010 (No. 3). See also Evan Medeiros, *Reluctant Restraint*, pp. 210-239; and Gu Guoliang, 'Zhong Mei liang guo zai junking deng lingyu de hezuo yu fenqi', [Sino-US cooperation in the fields of arms control and the differences], *Shijie jingji yu zhengzhi* [World Economics and Politics], No.1, 1999, pp.12-13.
[62] Tang Hua, 'Weile weihu guojia he minzu de zuigao liyi- Zhongguo zanting heshiyan de qianhou' [In order to safeguard the highest interests of the country and the nation - China before and after the moratorium on nuclear testing] *Liaowang* [Outlook], No. 41, 1996, pp. 14-15.
[63] Statement by the Chinese government upon signature of the Comprehensive Test Ban Treaty (CTBT), 24 September 1996, http://www.nti.org/db/engdocs/ctbtdec.htm [accessed 5 January 2011]
[64] Speech by Fu Cong, of the Chinese Department of Arms Control and Disarmament, Ministry of Foreign Affairs, 'An introduction of China's Export Control System', Tokyo Workshop on Nonproliferation Export Control Regimes, 11-12 December 1997, Tokyo, Japan. For more, see Kent, *Beyond Compliance*, p. 94.

Treaty (FMCT) negotiations.[65] By 1998, the US and China even agreed to a non-targeting arrangement, as well as an agreement on the peaceful use of nuclear technology (PUNT).[66]

Of these commitments, including those made in the first half of the 1990s, China's signature of the CTBT can be considered the most significant. This is not to say that earlier commitments such as joining the NPT were unimportant: joining the NPT was an essential step that had to be taken if China wanted to be fully integrated into the nuclear order. However, in agreeing to end all forms of nuclear testing China had to accept for the first time internationally imposed limitations on the national development of nuclear weapons. Moreover, the CTBT was a particularly tough agreement for late comers to the nuclear club like China or India. As Zou Yunhua, an expert from the Commission on Science, Technology, and Industry for National Defence (COSTIND) on the Chinese delegation to the CTBT points out, the treaty 'caught China in the middle of its nuclear weapons programme, whereas the US, Russia and Britain had completed several development cycles'.[67] Similarly, nuclear scientist Sun Xiangli noted that China was 'not technically ready for a CTB'.[68] Testing was even shortened for the sake of that treaty.[69] Overall, the CTBT resulted in five glaring gaps in terms of survivability, safety, capabilities, data and experience. According to Sun, 'a CTB would seem to not only freeze the gap between

[65] Medeiros, *Reluctant Restraint*, pp.59-63.
[66] US-China Non-targeting Agreement, 1998, via Nuclear Threat Initiative (NTI) website http://www.nti.org/db/china/chusdet.htm [accessed 20 October 2010]. On PUNT, see US Department of Energy, Peaceful Uses of Nuclear Technology Agreement (PUNT), http://www.pi.energy.gov/usa_china_energy_cooperation.htm [accessed 1 February 2008]
[67] Zou Yunhua, 'China and the CTBT negotiations', Center for International Security and Cooperation, December 1998, http://iis-db.stanford.edu/pubs/10220/zouctbt.pdf [accessed 20 June 2010], p. 4.
[68] Sun Xiangli 'Implications of a CTB for China's Security Policy', Center for International Security and Cooperation, June 1997, http://iis-db.stanford.edu/pubs/10261/sun.pdf [accessed 20 June 2010], p.8.
Jeffrey Lewis argues that the CTBT was not costly to China as preparations had been underway since 1986, and tests were stepped up to accommodate the treaty, see Lewis, *Minimal Means of Reprisal*, p. 135. However, interviews conducted by the author in Beijing with Chinese nuclear experts between 2009 and 2011 indicate that the CTBT is considered a costly treaty both in security and sovereignty terms. This is also the opinion of leading western scholars of China, such as Johnston, *Social States*, p. 107; and Foot and Walter, *China, the United States, and Global Order*, p. 159.
[69] Zou,' China and the CTBT negotiations', p.5.

China and other nuclear states, but very likely enlarge this gap also'.[70] Essentially, this shows that the CTBT imposed a serious restraint on any future efforts to elevate the potency of China's nuclear arsenal.

Indeed, given the high cost, minimising the impact of this treaty on the credibility of China's nuclear deterrent was a key consideration for the Chinese delegation to the CTBT, and in internal informal discussions from 1993 to 1996.[71] Three aspects of these discussions stand out. First, China initially sought to exclude Peaceful Nuclear Explosions (PNEs) from the CTBT on the basis of national economic, energy and technical underdevelopment.[72] This position was unsuccessful but China subsequently supported a zero-threshold ban, driven by concerns that the US, given its advanced technological base, would be able to test nuclear weapons at much lower levels of threshold than any other CTBT state. Second, China considered the CTBT verification system discriminatory in two areas: the use of National Technical Means (NTM) in the International Monitoring System, and the method for triggering On Site Inspections (OSI). According to China, given varying levels of technical development among member states, those with developed NTM were at an unfair advantage to understand relevant raw scientific data, and were thus better protected and able to accuse others of violating the treaty. China was also uncomfortable with the automatic triggering of OSI. On both issues China had to compromise. Third, like the UK and Russia, China sought the inclusion of nuclear threshold states, namely India, Pakistan and Israel, as a condition for the entry into force of

[70]Sun, 'Implications of a CTB for China's Security Policy', p.10.
[71] Author interviews, Monterey, 5 December 2011 (No. 12) and (No.22). For an excellent discussion of these Chinese positions, see Johnston, *Social States*, pp. 99-105.
[72] On China's position regarding PNEs, see Rebecca Johnson, *Unfinished Business, the Negotiation of the CTBT and the End of Nuclear Testing* (Geneva, Switzerland: United Nations Institute for Disarmament Research, 2009), pp. 76-102.

the CTBT.[73] In the end, a list of 44 states, including India, was established as a precondition for the treaty to enter into force.

The tracing of China's debate over the CTBT is useful since it offers insight into internal dynamics driving decisions on nuclear matters in the mid to late 1990s. In particular, the CTBT negotiations exposed disagreement between the PLA and the Chinese Foreign Ministry. The PLA, unlike the Foreign Ministry, was generally unwilling to forsake nuclear testing over concerns that the CTBT would constrain too severely China's future nuclear options and render its position permanently inferior to other nuclear weapons states- especially since these had conducted more nuclear tests than China.[74] For its part, the China Academy of Engineering Physics (CAEP), responsible for the safety and reliability of China's nuclear deterrent, was also concerned that the number of tests represented the bare minimum, meaning that China's nuclear arsenal would always remain the most backward of the five recognized nuclear weapons states.[75] Given these concerns, internal discussions of the CTBT were interpreted by some in the West as a deliberate delaying tactic to gain crucial time for tests that would ensure the CTBT would be less costly to national defence.[76]

Understanding China's Engagement in the 1990s

So far, this chapter has explored two ways in which China engaged in the process of consolidating nuclear order in the 1990s: first, by modernising its nuclear forces and refining its thinking on aspects of nuclear strategy; and second, by committing itself further to institutional aspects of nuclear order, for instance by signing the CTBT in 1996.

[73] Wendy Frieman, *China, Arms Control and Nonproliferation* (London: Routledge, 2004), p. 48.
[74] Evan Medeiros, 'Understanding the Jun (军) in Junkong (军控): assessing the role of the PLA in China's arms control and non-proliferation policies', *Chinese Council of Advanced Policy Studies*, December 2003, pp. 1-23.
[75] Author interview, Beijing, 15 July 2011 (No.53).
[76] Alastair I. Johnston, *Social States, China in International Institutions 1980-2000* (Princeton: Princeton University Press, 2008), p. 103.

Among domestic variables, there clearly existed a strong technological rationale driving China's decision to modernise its nuclear arsenal. Despite the emergence of basic retaliatory capabilities in the late 1980s, namely the DF-5 ICBM and Xia SLBM, China's arsenal was already aging and backward by major power standards. This is unsurprising since China's ICBM and SLBM programmes were initiated in the 1950s. Over 50% of China's ballistic missiles were solid-fuelled, requiring over two hours for the refuelling process. Short-falls in warning technology also meant that the PLA possessed no real-time intelligence to gauge the size or exact time of an incoming nuclear attack. Added to this, China's Xia SLBM capability was weak and H-6 bombers could easily be penetrated by US and Russian air defences. China's nuclear deterrent essentially rested on a handful of land-based ICBMs. As Johnston suggests, China's nuclear deterrent was at best a 'strategic monad'.[77] Thus, for reasons of safety and credibility, the Chinese nuclear arsenal urgently required modernization.

Economic imperatives shed persuasive light on China's decision to join the NPT in 1992.[78] The NPT enabled greater access to technology and would help China secure Most Favoured Nation (MFN) trading status, as well as goods and services from Japan, France and the US.[79] Indeed, it was no accident that China declared its intention to sign the NPT during a state visit to Japan in August 1991. During that visit, as Foot and Walter point out, Japan offered $6 billion in aid to China on the condition Beijing would sign the NPT and

[77] Johnston, 'Prospects for Chinese Nuclear Force Modernization', p. 558.
[78] Alastair I. Johnston, 'Learning versus adaptation: explaining change in Chinese arms control policy in the 1980s and 1990s', *The China Journal*, No. 35, January 1996, pp. 27-61; and Bates Gill, 'Two Steps Forward, One Step Back: The Dynamics of Chinese Nonproliferation and Arms Control Policy-Making in an Era of Reform' in David Lampton ed., *The making of Chinese foreign and security policy in the era of reform, 1978-2000* (Stanford: Stanford University Press, 2001), pp. 257-288. For Chinese analysts on learning see: Hu Weixing, 'Nuclear Proliferation', in Deng Yong and Wang Fei L., eds., *The Eyes of The Dragon: China Views the World* (London: Rowman &Littlefield, 1999), pp. 119-135; and Zhu Mingqian, 'The Evolution of China's Non-proliferation Policy', *The Nonproliferation Review*, Winter 1997, pp. 40-48.
[79] Garrett and Glaser, 'Chinese Perspectives on Nuclear Arms Control', p. 50; and Zachary Davis, 'China's Nonproliferation and Export Control Policies: Boom or Bust for the NPT Regime?' *Asian Survey*, Vol. 35, No. 6, 1995, pp. 592-593.

more actively support non-proliferation.[80] Likewise, the decision to sign PUNT with the US entailed various economic benefits for China.[81] Overall, prioritising arms control and non-proliferation complemented China's national goals of economic development by ensuring a stable international environment conducive to national economic growth.[82] Conversely, it is important to note that commercial interests had the opposite effect in certain cases, such as the decision to export sensitive material to Iran, Pakistan and India in the early 1990s.[83]

Considerations of image and status underpinned China's decision to maintain and reinforce NFU. Given that none of the other P5 nuclear armed states maintained such a pledge, this afforded the Chinese political leadership unique moral high-ground in the nuclear club.[84] Conversely, the image and security costs of abandoning NFU were high for China. Crucially, the decision to promote an international NFU treaty, release white papers on arms control and disarmament, and join the NPT all contributed to a peaceful image of China, likely reassuring its neighbours that it would conform to internationally accepted standards of behaviour in its non-expansionist, peaceful rise in global affairs. As will be highlighted below, this occurred amidst a number of external pressures, notably criticism for its nuclear tests in the 1990s, as well as accusations that it had proliferated contentious nuclear technology and equipment to Pakistan and Iran, among others. China's negotiating stance in the CTBT also reflected concerns over status as Johnson argues, China 'wanted to play as an equal among the P-5, but did not want India to be accorded the same status or allowed to become a serious military or nuclear competitor in the future'.[85]

[80]Foot and Walter, *China, the United States, and Global Order*, p. 163.
[81] Author interview, Washington DC, 1 April 2011 (No.11).
[82] Wu, 'China's policies toward arms control and disarmament', p. 577.
[83]Medeiros, *Reluctant Restraint*, pp. 53-54 and p. 59.
[84] Shen Dingli, 'Nuclear Deterrence in the 21st Century', Issue No.1, *China Security*, August 2005, p. 11.
[85] Johnson, *Unfinished Business*, p. 122.

Elsewhere, Bates Gill and Evan Medeiros point to the positive role played by a growing arms control community in China, which led to more channels of information and deeper participation inside institutions.[86] China established a number of nuclear related institutions, from the Department of Arms Control and Disarmament within the Foreign Ministry in 1997 to arms control groups within leading research institutes such as the PLA Academy of Military Sciences, the IAPCM and the Chinese Academy of Social Sciences. Foot and Walter add that the Foreign Ministry played a critical role in reforming nuclear policymaking in China, encouraging research on arms control and non-proliferation, as well as claiming a stake in internal debates over policy between the Ministry of Foreign Trade and Economic Cooperation and Atomic Energy Agency.[87] According to a number of Chinese analysts, these internal bureaucratic developments had a positive effect by emphasising the value of the non-proliferation norm.[88] The role of particular individuals, such as China's second ambassador for disarmament, Sha Zukang, should also be noted.[89] According to Kent, 'under Sha's guidance, China's policy also became more clear-cut and consistent [*whereas*] before it was divided by inter-agency fights'.[90]

Closely linked to concerns about its economic development and international image, foreign pressure acted as a driver for China's engagement. Of all China's foreign relations, Medeiros argues that Sino-US relations were the most important. For Medeiros,

[86] Bates Gill and Evan Medeiros, 'Foreign and Domestic Influences on China's Arms Control and Non-Proliferation Policies', *The China Quarterly*, No. 161, March 2000, pp.66-94. See also Medeiros, *Reluctant Restraint*, chapter Five; and Johnston, *Social States*, pp. 53-63.
[87] Foot and Walter, *China, the United States, and Global Order*, p. 161. See also Jing Ding Yuan, 'Assessing Chinese non-proliferation policy: progress, problems and issues for the United States', prepared statement for the US-China Security Review Commission Hearing on China's Proliferation Policies, Washington D.C., 12 October 2001.
[88] Huang Zhijian, 'He bukuosan yi ge riyi shijie ren guanzhu de wenti' [Nuclear non-proliferation – a question that increasingly draws the attention of the peoples of the world], *Shijie jingji yu zhengzhi* [World Economics and Politics], No. 7, 1992, p. 48; and Liu Huaqiu, 'Zhongguo hejunkong zhengce pingxi' [Analysis of China's nuclear arms control policy], *Xiandai junshi* [Modern Military Affairs], November 1995, pp. 15-18.
[89] From 1997 onwards, Sha made promotion within the Department of Arms Control and Disarmament conditional on completion of relevant training at the Center for Nonproliferation Studies (CNS) in Monterey, California. Author interview, Monterey, 17 October 2011 (No.43).
[90] Kent, *Beyond Compliance*, p. 84.

'US policy intervention played a significant and enduring role in fostering China's increasing commitment to non-proliferation'.[91] According to this view, the US encouraged and coerced China to join the non-proliferation regime through incentives such as making implementation of the NCA conditional on China's joining of the NPT;[92] sanctions over sensitive technology transfers to Pakistan and Iran; as well as the educational/learning role of bilateral dialogues -- for instance between the US National Academy of Science and the Chinese Scientists Group on Arms Control -- in convincing the Chinese of the value of a CTBT.[93]

However, it would seem that in understanding China's decision to enter into negotiations and sign the CTBT, US pressure did not play the most significant role. Instead, hefty criticism for Chinese nuclear tests in the 1990s from Japan, as well as states within the Non Aligned Movement (NAM), and the perceived loss of international image as a result of these tests, seemed to play a decisive role in motivating China to enter into negotiations.[94] Never before had developing countries openly denounced China to such a degree, and the nature of their criticism was particularly strong, accusing China of undermining the very moral fabric of nuclear order.[95] China also faced the wrath of a number of international NGOs. Johnson highlights in particular the role of one British NGO, VERTIC, in applying pressure on China by exposing one of its nuclear tests in 1993. According to Johnson, this exposure caused China for the first time to make a public

[91] Medeiros, *Reluctant Restraint*, p. 13.
[92] Ibid, p. 73. The NCA was particularly important as one of the first instances where a foreign government engaged extensively with the Chinese on matters related to nuclear non-proliferation. See Foot and Walter, *China, the United States, and Global Order*, pp. 165-66.
[93] Medeiros, *Reluctant Restraint*, p. 228.
[94] Garrett and Glaser, 'Chinese Perspectives on Nuclear Arms Control', p. 50.
[95] The exact quote in 1993 was 'violating the moral conscience of the international community'. See Johnston, *Social States*, p. 113. For Johnston, this pressure amounted to a form of socialization, what he terms 'social influence', p. 116.

commitment to a CTBT 'no later than 1996'.[96] Indeed, Zou, a key member of the Chinese delegation to the CTBT, concedes that in the context of this pressure, 'the necessity of maintaining international image' was a key consideration for China.[97]

Another view is that in the 1990s, China saw the nuclear order in a more positive light. In essence, the nuclear order now offered a more conducive environment in which to realise a more multilateral and representative order.[98] Several Chinese nuclear experts contend that the NPT had proved its worth by playing a positive, stabilising international role.[99] In addition, the NPT had become a truly global body, with membership expanding to a number of countries friendly to China such as Egypt (1980), North Korea (1985) and Colombia (1986). In 1991, even France had joined the NPT, leaving China as the only P5 state outside the NPT.[100] In this context, there was mounting international pressure for China to recognise 'the importance of being part of this [arms control] trend' and not get left behind.[101]

In sum, the most persuasive factors in understanding Chinese engagement during this period are related to economic development, international image and foreign pressure. Pressure and protests from developing states over Chinese nuclear tests in the 1990s represents a clear factor driving the Chinese decision to enter CTBT negotiations in 1994, perhaps its deepest form of engagement with nuclear order to date. However, China should not be considered simply a passive actor, pushed and pulled towards mainstream thinking on nuclear deterrence and the arms control and non-proliferation pillars of nuclear order.

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[96] Johnson, *Unfinished Business,* pp.45-46. In *Social States,* Johnston refers to the Greenpeace incident in May 1996, when the NGO sent a protest ship into Shanghai just as China was preparing for another nuclear test, p. 114.
[97] Zou, 'China and the CTBT negotiations', p. 15.
[98] Zou Yunhua, 'Bukuosan hewuqi' [Nuclear Nonproliferation], *Guoji wenti yanjiu* [International Studies], No. 2, Spring 1990, pp. 12-15.
[99] Author interviews, Beijing, 12 July 2011 (No. 36) and 15 July 2011 (No.53).
[100] Johnston, *Social States*, p. 133.
[101] Malik,'China's Policy Towards Nuclear Arms Control in the Post-Cold War Era', p. 73.

China's engagement with nuclear order reassured developing and developed states alike of its security intentions and thereby gaining legitimacy and acceptance, a 'way in' to the new post cold war world. In doing so, China hoped to have a hand in the construction of a more representative nuclear order.[102] Conversely, multilaterism also represented a 'way out' for China, from negative international perceptions following Tiananmen and ideas building in the West such as threats emanating from the 'rise of China' based on assessments of Chinese military modernization, its position towards Taiwan and projections of its behaviour as a global superpower.

Reconfiguring Global Nuclear Order?

By the end of the decade, US nuclear strategy began to change, new nuclear weapons states emerged, and momentum in arms control and non-proliferation began to stall.[103] The US especially feared terrorist groups' acquisition of weapons of mass destruction, prompting Washington to emphasize counter-proliferation rather than non-proliferation.[104] Together, these developments began to unravel many important institutional aspects of nuclear order that had emerged in the 1990s.

Shifts in US nuclear weapons policy had a particularly negative impact in this regard. The Clinton administration had been quietly revisiting its nuclear strategy since 1997 through its Counter-proliferation policy, Presidential Decision Directive-60 and a Quadrennial Defense Review. All three documents declined to rule out using nuclear weapons to preserve US hegemony and security.[105] Throughout most of the 1990s, several reports suggested that US nuclear planners were trying to convince Clinton to reinstate

[102] Wu Yun, 'China's policies toward arms control and disarmament: from passive responding to active learning', *The Pacific Review*, Vol. 9, No. 4, 1996, pp. 577-606.
[103] Sha Zukang, Statement at the first session of the Preparatory Committee for the 2000 Review Conference of the Parties in the NPT, 27 April 1998.
[104] Andreani, 'The Disarray of US Non-Proliferation Policy', p. 46.
[105] On these documents, see William Arkin and Hans Kristensen, 'Dangerous Directions' *Bulletin of the Atomic Scientists*, Mar-Apr 1998, pp.26-31.

China at the centre of US nuclear planning.[106] Eventually, by 1998 China was brought back into the US Single Integrated Operational Plan (the US general plan for nuclear war) despite the US agreeing that same year to a non-targeting arrangement with China.[107] The US also began to backtrack on certain arms control commitments. On 13 October 1999, the US Senate voted to reject ratification of the CTBT and throughout the late 1990s, Washington flirted with National Missile Defense (NMD) threatening the Anti Ballistic Missile Treaty (ABM) which China considered sacrosanct in preserving global security.[108] In 1999, Clinton even signed legislation 'to deploy as soon as is technically possible' NMD, fuelling Chinese concerns.[109] Chinese analysts were particularly wary of joint research on missile defence between the US and Japan, as well as the potential transfer of similar technologies to Taiwan.[110] As Shen Dingli of Fudan University argued, given China's small arsenal, missile defence could potentially neutralise China's nuclear deterrent.[111] In addition, the US decision not to ratify the CTBT and the lack of progress on

[106] STRATCOM and certain US Department of Defense offices unsuccessfully sought to increase nuclear planning against China in the 1994 US Nuclear Posture Review. See Hans M. Kristensen, Robert S. Norris and Matthew McKinzie, *Chinese nuclear forces and US nuclear war planning* (Federation of American Scientists and Natural Resources Defense Council, November 2006), p. 27.

[107] Ibid, p. 164. See also Hans Kristensen, 'The matrix of deterrence, U.S. strategic command force structure studies', The Nautilus Institute, May 2001, pp. 14-15.

[108] Carl Cerniello, 'NMD Bill Clears Congress as Senate Re-Examines ABM Treaty', *Arms Control Today*, April/May 1999.

[109] On these concerns, see Wu Xing Zuo, 'Meiguo yanfa daodan fangyu xitong weihai guoji anquan' [US BMD: Endangering the World Security] *Xiandai guoji guanxi* [Contemporary International Relations] No. 9, 1999, pp. 16-18; Sha Zukang, 'Can BMD really enhance security?' remarks at the Second US-China Conference on Arms Control, Disarmament and Nonproliferation, 28 April 1999, Monterey, California; and Chinese-Russian Press Communiqué on Consultations on Issues Pertaining to the ABM Treaty, 14 April 1999, http://www.nti.org/db/china/engdocs/chrus499.htm [accessed 23 January 2011]

[110] Theater Missile Defense Architecture Options in The Asia-Pacific Region, US Department of Defense, May 1999. In August 1999, the US and Japan signed a five-year agreement for joint research on advanced sea-based technologies. On the Chinese reaction to this and TMD more generally, see Zhu Bangzao, 'Chinese Foreign Ministry Spokesperson Answers Questions on US-Japan TMD Joint Research Program at News Briefing' 31 December 1998; and Yan Xuetong, 'Theatre Missile Defense and Northeast Asian Security', *The Nonproliferation Review*, Spring/Summer 1999, p. 65-74.

[111] Shen Dingli,'What missile defense says to China', *Bulletin of the Atomic Scientists*, Vol. 56, No. 4, July/August 2000, pp. 20-21.

a FMCT cast serious doubt in China's mind as to the future of the nuclear order that had been in the making during the 1990s.[112]

Sino-US relations reached a low point in 1999 for reasons other than missile defence. Proliferation, human rights and Taiwan continued to cloud relations but the accidental bombing in 1999 of the Chinese embassy in Belgrade by US led NATO forces dealt a serious blow to relations, with the Chinese considering the bombing an intentional act on the US side. US unease also continued to surround China's nuclear force modernization plans. US estimates of Chinese military power projected that by 2015 China, as a consequence of its military modernization process, would have around 100 ICBMs and tens of SLBMs.[113] These predictions were reiterated in the infamous US Congressional Cox Report leaked in 1999, which accused China of spying and stealing designs in the 1980s of a US W-88 thermonuclear warhead (used in a SLBM system) and W-70 enhanced radiation warhead (tactical nuclear weapon).[114] The Cox report was met with sharp condemnation from officials and analysts in China.[115] Even today, many Chinese analysts continue to call for an apology, which the US government refuses to give.[116] The immediate effect of the Cox report was the termination of the US-China nuclear lab-to-lab

[112] Jia Shilu, 'Xian de xinhao- ping Meiguo canyiyuan foujue- quanmian jinzhi he shiyan tiaoyue' [On CTBT and US failure to ratify: Dangerous signal, assessment the U.S. Senate rejected the Comprehensive Nuclear Test Ban Treaty], *Liaowang* [Outlook], No. 43, 1999, p.9; and Zhu Chenghu (Chinese National Defense University), 'Obstacles to nonproliferation', at the INESAP conference in Shanghai, 8-10 September 1997.

[113] Bates Gill, James Mulvenon and Mark Stokes, 'The Chinese Second Artillery Corps: Transition to Credible Deterrence', in James C. Mulvenon, Andrew N.D.Yang, eds., *The People's Liberation Army as an Organization: Reference Volume1.0*. (Santa Monica: RAND, 2001), p. 550.

[114] *Arms Control Today*, 'The Cox Report: Selected Text and Commentaries', April/May 1999. The US Jeremiah Commission later established that the theft had not significantly enhanced China's nuclear deterrent. The US also accused and sentenced to jail a Los Alamos scientist, Wen Ho Lee, for apparently spying for the Chinese in the 1990s.

[115] Government of People's Republic of China, 'Shishi sheng yu xiongbian huangyan by gong zip o- zai bo 'kao ke si baogao' [Facts speak louder than words and lies will collapse by themselves], 15 July 1999; and Zhu Feng, 'Kao ke si baogao: neirong he yingxiang- Meiguo wumie Zhongguo "he qiemi shijian fenxi"', [Cox reports: content and effects - the United States slandered the Chinese 'nuclear theft' event analysis], *Shijie jingji yu zhengzhi* [World economics and politics] No. 7, 1999, pp. 35-41.

[116] Author interviews, Beijing, 22 November 2010 (No. 30) and 13 June 2011 (No.35). For more on the lab-to-lab programme, see Nancy Prindle, 'The U.S.-China Lab-to-Lab Technical Exchange Program', *The Nonproliferation Review*, Spring-Summer 1998, pp.111-118.

programme that the Chinese had considered a success in the 1990s.[117] The report also tarnished an image China had sought to build in the 1990s, namely that of a responsible nuclear weapons state.[118] More generally, the report set back progress made in the bilateral nuclear relationship, heightening mutual suspicion.[119]

Beyond the US, nuclear proliferation concerns abounded. In May 1998, India successfully conducted a handful of nuclear tests and specifically referred to the threat posed by China to its national security as a reason for developing nuclear weapons.[120] A few days later, Pakistan followed with a series of missile and nuclear tests. Then in July 1998, Iran launched a Shihab-3 missile and in August, North Korea tested a Taepo Dong missile.[121] There also existed growing fears of terrorism involving the use of cyberspace or weapons of mass destruction following the attacks on the US World Trade Center in 1993 and on US embassies in Kenya and Tanzania in 1998.[122]

Of these developments, the nuclear tests in South Asia had a potentially serious impact on nuclear order, as well as China's own security and status in that order. The security threat to China rested on the new reality that India, armed with Agni ICBMs, now had the ability to target Beijing, Shanghai and Hong Kong.[123] Indeed, in response, unconfirmed rumours circulated in 1999 that China had moved missiles to the Tibetan

[117] Author interviews, Beijing, 31 August 2009 (No. 46) and San Diego, 2 August 2010 (No. 3).
[118] Jeffrey Richelson, 'Uncertain Damage', *Bulletin of the Atomic Scientists*, Vol. 55, No. 5, 1999, pp. 17-19.
[119] Michael May, ed., 'The Cox Committee Report: An Assessment', Center for International Security and Cooperation, December 1999, http://iis-db.stanford.edu/pubs/10331/cox.pdf [accessed 20 June 2010]
[120] Jaswant Singh, 'Against Nuclear Apartheid', *Foreign Affairs*, Vol. 77, No. 5, September/October 1998, pp.41-52; Lowell Dittmer, *South Asia's nuclear security dilemma: India, Pakistan, and China*, (Armonk N.Y: M.E. Sharpe, 2005); and Arpit Rajain, *Nuclear deterrence in Southern Asia: China, India, and Pakistan* (California: Sage Publications, 2005).
[121] Andreani, 'The Disarray of US Non-Proliferation Policy', pp. 45; and William Walker, 'Nuclear enlightenment and Counterenlightment', *International Affairs*, Vol. 83, No. 3, 2007, pp. 431-453.
[122] Andreani, 'The Disarray of US Non-Proliferation Policy', p. 46.
[123] Ming Zhang, 'What threat?', *Bulletin of the Atomic Scientists*, Vol. 55, No. 5, Sep-Oct 1999, p. 55; Cai Yun, 'Ping Yindu heshiyan' [Assessment of nuclear tests in India], *Xiandai junshi* [Modern Military Affairs], No.7, 1998, p. 24; and Mark W. Frazier, 'China-India relations since Pokhran II: assessing sources of conflict and cooperation', *Access Asia Review*, Vol. 3, No.2, 2000.

plateau close to the border with India.[124] However, far more problematic for China was how India's declared nuclear status fundamentally altered regional nuclear dynamics. India was the first state to overtly proclaim itself a nuclear weapons state since China had tested its own nuclear device in 1964.[125] To compound matters, India made clear references, both prior to and after the test in 1998, to China as a reason for going nuclear. China immediately refuted the Indian claim as 'totally unreasonable' pointing to other factors driving India's decision: ambitions for regional hegemony and great power status, and to balance neighbouring military capabilities, not just in Pakistan and China but also the US military presence in the Indian Ocean. [126]

The nuclear tests in South Asia also undermined nuclear order in a number of ways. First, as a volatile region, South Asia's nuclearisation heightened the prospect of nuclear war.[127] Second, more generally, the tests went against positive trends such as the indefinite extension of the NPT in 1995, the signing of the CTBT in 1996, and the decision to rollback nuclear weapons programmes and join the NPT in South Africa (1991), Argentina (1995) and Brazil (1998). Given that both India and Pakistan resided outside the CTBT and NPT--indeed India was a vocal opponent of the CTBT-- Chinese analysts such as Li Zhimin and Li Feizhi of the CAEP feared that the tests would set a 'bad example'.[128] Moreover, according to Chinese nuclear experts, these new nuclear states complicated the

[124] Author interview, Beijing, 22 July 2011 (No. 24).
[125] William Walker, 'International Nuclear Relations after the Indian and Pakistani Test Explosions', *International Affairs*, Vol. 74, No.3, 1998, pp.517-518.
[126] Zou Yunhua, 'Chinese perspective on the South Asian Nuclear Tests', Center for International Security and Cooperation January 1999, http://iis-db.stanford.edu/pubs/10225/zousouthasia.pdf [accessed 20 June 2010] p. 19; Chen Yali, 'India's 'China menace' accusations refuted', *China Daily*, 14 July 1998, p.4; and Zhang Ming, *China's changing nuclear posture: reactions to the South Asian nuclear tests* (Washington DC: Carnegie Endowment for International Peace, 1999).
[127] Wu Peng, 'Nanya he weiji jidui diqu anquan de yingxiang' [South Asia nuclear crisis and the impact on regional security] *Shijie jingji yu zhengzhi* [World Economics and Politics] No. 1, 1999, pp. 18-19; and Zhou Xue-Hai, 'He weishe de tiaojian- jian lun Nanya he weishe de qianjing' [Conditions of nuclear deterrence and on the prospects of nuclear deterrence in South Asia] *Shijie jingji yu zhengzhi* [World Economics and Politics], No. 4, 1999, pp. 46-49.
[128] Li Zhimin and Li Feizhi, 'impact of South Asia's Nuclear Tests upon CTBT', paper presented at the Sixth ISODARCO Beijing Seminar on Arms Control, 29 Oct-1 Nov 1998, Shanghai, China, p. 9.

nuclear order by re-enforcing the significance of nuclear deterrence, as well as undermining non-proliferation and the prospect of a non-nuclear order.[129] Third, the tests openly exposed a critical problem in the nuclear order: the labelling of nuclear possessor states that resided outside the NPT framework. This is a problem that had arguably begun with Israel in the 1970s, and was evident in the 1998 NPT PrepCom meeting when the US government refused to discuss Israel's undeclared nuclear status.

Despite these fears, China's immediate response to the tests was not to implement sanctions against either India or Pakistan. Instead, China chose to co-host P5 talks on this issue at the UN to draft UNSC Resolution 1172, opting to actively use non-proliferation tools to police the nuclear order.[130] Then, on 27 June 1998, China issued a joint statement with the US calling for India and Pakistan to cease testing, and join the CTBT and NPT. China, as the only recognized nuclear weapons state and signatory to both the CTBT and NPT in Asia, was particularly keen to ensure that India and Pakistan were not recognized as legitimate nuclear weapons states. Therefore, in the joint statement on this issue, it was made clear that 'notwithstanding their recent nuclear tests, India and Pakistan do not have the status of nuclear weapons states in accordance with the NPT'.[131]

By the late 1990s, then, nuclear order did not resemble the multilateral order China had in mind. Instead, the US seemed to be establishing itself as a nuclear hegemon, to whom the rules of nuclear order, an order it had played a major role in creating, no longer applied. Shifts in US nuclear policy posed a serious challenge for nuclear order: undoing deterrence and arms control by reshaping these with an emphasis on defence. To complicate matters, the nuclear tests in South Asia increased the threat of nuclear war,

[129] Author interview, Beijing, 20 July 2011 (No. 42). See also Ambassador Qian Jiadong, 'Eliminating Nuclear Weapons: China's policy', statement, 7 November 1998, London, UK.
[130] Tang Jiaxuan, Chinese Foreign Minister, press conference on the P-5 Meeting on the Non-proliferation of Nuclear Weapons and the Situation in South Asia, Geneva, 4 June 1998.
[131] 'Joint Statement of the Heads of China and the United States on the Issue of South Asia', *Renmin Ribao* (overseas edition), 27 June 1998.

reinforced nuclear deterrence and undermined important institutional aspects of nuclear order such as the CTBT and NPT.

Conclusion

This chapter has shown that in the post-cold war 'new world order' China sought to build a more representative nuclear order by adopting a two-track approach: military modernization and discussions of nuclear strategy, as well as multilateral approaches to arms control and non-proliferation. Such an approach was intended to bolster China's credibility as well as its legitimacy in the nuclear order.

The first track of Chinese military modernization, with its focus on conventional weaponry and limited nuclear weapons development, had a stabilising effect on nuclear order since China's goal remained a secure second strike force rather than warfighting capabilities. In terms of strategy, uncertain retaliation remained in place despite doubts over NFU and debates over how best to shape strategy, in particular whether it should transition to assured retaliation or shift more radically to a warfighting posture. Of the two, assured retaliation reflected the official line. More generally, the emphasis on retaliation in strategy continued to contribute to thinking on nuclear deterrence because it was an alternative way of thinking to assured destruction and nuclear superiority. More importantly, China's limited modernization and discussions of nuclear strategy demonstrated that predicted fears in the 1980s of a 'tripolar nuclear balance' between the US, the USSR and China had not come about. Instead, China continued on the same path it had been on since the 1960s: to establish a credible yet limited retaliatory nuclear force.

The second track also had a stabilising impact on nuclear order. China's decision to adopt multilateral approaches to arms control and non-proliferation validated these core pillars of nuclear order. Of the many arms control and non-proliferation efforts undertaken by China, joining the NPT in 1992 and accession to the CTBT in 1996 represent the most

significant commitments. China's decision to join the NPT elevated the importance and universality of both the treaty and the non-proliferation norm. Likewise, Beijing's signature of the CTBT, a costly treaty in terms of China's limited nuclear arsenal, displayed a clear and strong commitment to arms control and non-proliferation, strengthening those pillars of nuclear order. In addition, China's participation in the nuclear order provided momentum to arms control initiatives in the 1990s, reassuring non-nuclear weapons states, and prompting renewed confidence in the NPT and its bargains. It also contributed to new cooperative nuclear relationships with both the US and Russia, with bilateral agreements, dialogues and technical exchanges enhancing mutual trust and understanding. Such an approach had stabilising implications for nuclear order. Overall, participation in the nuclear order was beneficial to China in two main ways: it gained a 'way in' to the new post cold war world, and possibly a hand in the construction of a more representative nuclear order. Similarly, it also represented a 'way out' from negative international perceptions following Tiananmen and the 'rise of China' threat theory.

However, serious challenges appeared in the late 1990s, threatening to undo progress made on institutional aspects of nuclear order earlier in that decade. A more complicated strategic environment emerged, focused on missile defence and counter-proliferation rather than non-proliferation. The US Cox report and NMD especially concerned China, denting both its image and confidence in its minimal nuclear deterrent. The nuclear tests conducted by India and Pakistan were also alarming developments for China, undermining not just its status in the region but also nuclear order. These challenges thus cast a shadow over the future of nuclear order, and China's confidence in that order. Whether China would continue to invest in the nuclear order, and whether that order was strong enough to withstand these challenges is the subject of the next chapter.

Chapter Six
China and the maintenance of nuclear order in the 2000s

In the 2000s, a consensus has emerged among nuclear scholars: the global nuclear order is in crisis, under strain, perhaps even broken.[1] But does China share this view? If so, to what extent has China engaged in the process of maintaining and upholding nuclear order? It is to these questions that this chapter refers. The chapter is divided into four sections. The first section unpacks the nature of the crisis facing global nuclear order, pointing to proliferation concerns, institutional deadlock, as well as changes in US nuclear weapons policy. The second section explores China's response to these changes in terms of its own strategy and whether it remains based on a retaliatory second strike force capability. The third section will focus on China's wider actions regarding the institutional paralysis and proliferation crises that have plagued the non-proliferation regime in the 2000s. The last section will turn to more recent developments and Chinese perspectives on the future of global nuclear order, in particular the call for a nuclear weapons free world (NWFW), nuclear security efforts and the controversial 2008 US-India civilian nuclear deal.

Overall, it will be argued that China has contributed to maintaining nuclear order by remaining committed to a retaliation based strategy and by continued engagement with institutional aspects of nuclear order, even playing a direct role in trying to resolve the proliferation challenge posed by North Korea. However, in other areas, China has adopted a cautious attitude, for example in negotiations towards a Fissile Material Cut-off Treaty

[1]William Walker, 'Nuclear order and disorder', *International Affairs*, Vol. 76, No. 4, 2000, p.722; Sha Zukang, 'China's Perspectives on Non-proliferation' in Joseph Cirincione, ed., *Repairing the Regime, Preventing the Spread of Weapons Of Mass Destruction* (New York: Routledge, 2000), p. 127; Commission of Eminent Persons on the Future of the Agency, 'Reinforcing the Global Nuclear Order for Peace and Prosperity, the role of the IAEA to 2020 and beyond', GOV/2008/22-GC (52)/INF/4, 2008; Mohammed ElBaradei, 'Preventing nuclear catastrophe: where do we go from here?' in Richard Falk and David Krieger, eds., *At the Nuclear Precipice: catastrophe or transformation?* (London: Palgrave Macmillan, 2008), p. 213; and Graham Allison and Ernesto Zedillo, 'The Fragility of the global nuclear order', *The Boston Globe*, 1 October 2008.

(FMCT), fearful perhaps that nuclear order is moving away from the more representative order China has long preferred, towards an order based on US nuclear hegemony.

Three Challenges to Global Nuclear Order

By the early 2000s, the global nuclear order that had consolidated in the early to mid 1990s faced deconstruction. The seeds of this deconstruction can be traced back to the late 1990s but this process gained considerable pace in the early 2000s.

The first set of challenges was proliferation based, triggered by fears of nuclear terrorism following the 9/11 attacks on New York and Washington in 2001; growing global interest in civilian nuclear energy, part of a so-called 'nuclear renaissance'; suspected nuclear weapons programmes in Iraq, North Korea and Iran; as well as the exposure in 2004 of an illicit nuclear trafficking network led by a former Pakistani nuclear scientist, A.Q. Khan.[2] Taken together, these developments placed serious strains on the NPT regime and questioned the efficacy of nuclear deterrence with respect to non-state actors such as terrorists.

Institutional deadlock represented the second serious challenge to the arms control and non-proliferation pillars of global nuclear order: the Comprehensive Test Ban Treaty (CTBT) eluded ratification in Beijing and Washington, and attempts to negotiate an FMCT languished at the Conference on Disarmament (CD), held up by procedural issues. In addition, a number of nuclear armed states such as India, Pakistan, Israel (and by 2003, an aspiring nuclear state, North Korea) remained outside both the Non Proliferation Treaty (NPT) and CTBT.

[2] On these challenges, see William Walker, 'Nuclear Enlightenment and Counterenlightenment', *International Affairs*, Vol. 83, No. 3, 2007, pp. 431-453; and Rose Gottemoeller, 'Arms Control in a New Era', *Washington Quarterly*, Vol. 25, Spring 2002, pp. 45-58. On the A.Q.Khan network, see David Albright and Corey Hinderstein, 'Unraveling the A.Q.Khan and Future Proliferation', *The Washington Quarterly*, Vol. 28, No. 2, 2005, pp. 111-128.

Third, important shifts were underway in US and Russian nuclear thinking, with the latter placing renewed emphasis on nuclear weapons in overall military strategy,[3] and the former undertaking a comprehensive review of its nuclear posture in the early 2000s.

Given the above developments, Chinese officials such as Liu Jieyi, the Chinese Director General for Disarmament and Arms Control, declared in 2002 that 'the global strategic landscape is transforming and the international security environment is facing new challenges'.[4] Similarly, in 2005, Zhang Yishan, head of the Chinese delegation to the CTBT, noted that 'severe challenges' confront the non-proliferation regime, arms control and disarmament process.[5]

Of the challenges highlighted above, changes in US nuclear weapons policy proved particularly problematic for China. Beijing was aware of gradual changes underway in US policy that began with the 'Lead and Hedge' strategy in 1995 and official documents like the Presidential Decision Directive 60 in 1997 which declined to rule out using nuclear weapons to preserve US hegemony and security.[6] However, from 2000, US policy underwent deeper shifts, suggestive perhaps of a desire for nuclear hegemony, in other words, a disarming first strike capability that could potentially undermine the nuclear deterrents of other nuclear armed states.[7] Indeed, during the 2000 US presidential campaign George W. Bush criticised President Clinton for 'active engagement' with countries like Russia and China.[8] Then, Bush began his first term of office by initiating

[3] On Russia's renewed reliance on nuclear weapons as cost-effective deterrents, see Rose Gottemoeller, 'Nuclear Necessity in Putin's Russia', *Arms Control Today*, April 2004.
[4] Liu Jieyi, 'Strengthening international cooperation, safeguarding world security', speech at the 12th International Arms Control Conference sponsored by the Sandia National Laboratory, 19 April 2002.
[5] Zhang Yishan, Statement by head of the Chinese delegation at the Conference on Facilitating the entry into force of the CTBT, 22 September 2005
[6] Bruce Blair, 'START III, nuclear war plans and the Cold War mindset', *The Defense Monitor*, 2000.
[7] Tian Jingmei, 'The Bush administration's nuclear strategy and its implications for China's Security', CISAC Working paper, Stanford University, March 2003, http://iis-db.stanford.edu/pubs/20188/tian.pdf [accessed 2 June 2009] , p.4.
[8] *Arms Control Today,* 'Presidential Election Forum: The Candidates on Arms Control', September 2000.

major reviews of all national security policies.[9] By May 2001, Bush had a 'nuclear plan'.[10] According to this plan, more attention would be paid to improving US nuclear strategy, promising to 'refashion the balance between defenses and deterrence'.[11] Crucially, the US no longer seemed prepared to settle for mutual deterrence with Russia or China.[12] Post 9/11, this shift accelerated, with the added incentive to combat the threat of nuclear terrorism and the nuclear suspects in the 'axis of evil'.[13]

This approach to nuclear threats was evident in US policy documents in the early 2000s, such as the 2001 Nuclear Posture Review (NPR), portions of which were leaked to the press in 2002.[14] The 2001 NPR continued a trend already developed in Clinton's 1995 NPR: a capabilities rather than intentions based approach to policymaking. In the 2001 NPR, a new TRIAD was proposed, based around new capabilities, including National Missile Defense (NMD). It was also contended that China 'could be involved in an immediate or potential contingency' and was placed on the nuclear targets list.[15] China later featured in a new US war plan in 2005, known as the OPLAN 5077, to include the use of nuclear weapons over a crisis involving Taiwan.[16] In addition to the 2001 NPR, in 2002, the US National Security Strategy was published, introducing the doctrine of pre-emption,

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[9] Robert Kerrey and William Hartung, 'Toward a New Nuclear Posture: Challenges for the Bush Administration', *Arms Control Today*, April 2001.
[10] *The Economist*, 'Bush's nuclear umbrella', 4- 11 May 2001.
[11] Jim Garamone, 'Rumsfeld Details DoD Goals', *PM*, January-February 2001, http://www.dau.mil/pubscats/PubsCats/PM/articles01/rumj-f.pdf [accessed 20 June 2010]
[12] Nikolai Sokov, 'The Fate of Russian Nuclear Weapons: an Anticlimax on August 11', CNS report, Monterey Institute of International Studies, 2002; and Joanne Tompkins, 'How US Strategic Policy is Changing China's nuclear plans', *Arms Control Today*, January/February 2003.
[13] *The Economist*, 'George Bush and the axis of Evil', 2-8 February 2002, pp. 13-14.
[14] Both the *Los Angeles Times* and *New York Times* managed to obtain declassified segments of the 2001 NPR. For the letter forwarding the NPR to Congress by Secretary of Defense Donald Rumsfeld in January 2002, see http://www.defense.gov/news/Jan2002/d20020109npr.pdf [accessed 20 October 2010]
[15] Zhu Feng, 'He taishi pinggu baogao yu Zhongguo- Meiguo weisheme yao chongxin tuixing dui Zhongguo de he weishe zhengce?'[Nuclear Posture Review and China-why the United States re-introduction of China's 'nuclear deterrent' policy?] *Guoji zhengzhi yanjiu* [Studies of International Politics] No.2, May 2002, pp. 82-91; and Guo Xiaobing and Sun Ru, 'Meiguo he mou ba zhanlue pingxi' [Analyzing US Strategy for Nuclear Hegemony] *Xiandai guoji guanxi* [Contemporary International Relations] Vol.7, 2006, pp. 50-55.
[16] H. Kristensen, R.S. Norris and M.C.Mckinzie, *Chinese nuclear forces and US nuclear war planning* (Federation of American Scientists and Natural Resources Defense Council, November 2006), p. 19.

an extension of the 1997 US Counter-proliferation policy. Then, in 2003, the US abrogated the Anti-Ballistic Missile (ABM) treaty, freeing itself to pursue NMD. In essence, all these developments fed into Bush's nuclear plan of invulnerability and unilaterism. This plan, if realised, had serious implications for nuclear order, suggesting that the US was re-working strategies to combat proliferation as well as the rules of nuclear deterrence so that it would now be guided not so much by Mutual Assured Destruction (MAD) but by a more unilateral form of assured destruction, the ability to overwhelmingly destroy the enemy and survive a nuclear war.[17]

What did this mean for China? According to one Beijing scholar, Wu Rui, the US wanted to simply 'capture Chinese nuclear deterrence, rather than know it'. [18] In particular, three features of US nuclear posture were of concern to the Chinese: NMD, the proposed new TRIAD and US abandonment of the arms control regime.

First, as Jan Lodal explains, if operational, NMD represented the 'ultimate military capability' granting the US a first strike capability to destroy the second strike force of any opponent.[19] This would mean that any state, irrespective of capability, would be vulnerable to US nuclear attack. Worse still, for China, US missile defence plans extended to Japan and Taiwan.[20] Thus, Chinese officials like Liu Jieyi remained unconvinced that China was

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[17] Liu Huaqiu, *Junbei kongzhi yu caijun shouce* [Arms Control and Disarmament Handbook] (Beijing: Guofang gongye chubanshe, 2000) p.3.

[18] Wu Rui,'American perspectives on Chinese nuclear policy, report of interviews in Washington DC' 2003, http://www.dur.ac.uk/resources/china.studies/the%20impact%20ofus%20nuclear%20policies%20on%20china.pdf [accessed 2 June 2009]

[19] Jan Lodal, 'Pledging No First Strike: A Step Toward Real WMD Cooperation', *Arms Control Today*, March 2001; and Shi Yinhong, 'Meiguo guojia daodan fangyu jihua yu Zhongguo de ke you he ying you duice' [NMD and China's policy choice: What are available and what should be adopted] *Harbin gongye daxue xuebao* [Journal of Harbin Institute of Technology] Vol.2, No.3, March 2000, pp. 12-16.

[20] Evan Medeiros, Rapporteur, 'Ballistic Missile Defense and Northeast Asian Security: Views from Washington, Beijing and Tokyo', Center for Nonproliferation Studies, 2001, pp. 9-16; and Evan Medeiros *Reluctant Restraint: the evolution of China's nonproliferation policies and practices, 1980-2004* (Stanford: Stanford University Press, 2007), pp. 181-184.

not the real target of US missile defence plans.[21] According to Chinese expert Sun Xiangli, of the Arms Control Division of the Institute of Applied Physics and Computational Mathematics (IAPCM) in Beijing, NMD had the potential to neutralise the Chinese nuclear deterrent.[22] By the early 2000s, China's deterrent remained based on uncertainty regarding the effectiveness of its retaliatory capabilities. This meant that the US would not know the exact number of Chinese Intercontinental Ballistic Missiles (ICBM) and therefore could not be certain that a first strike would be successful.[23] Thus, although the US and China shared unbalanced levels of capability the relationship remained stable. NMD promised to override this stability by rendering China's capacity for retaliation irrelevant. NMD was also of wider concern to the Communist regime for fear that NMD perhaps represented a 'trick to bring China into an arms race that would exhaust its resources and harm its economic development'.[24] In addition, NMD, if extended to Taiwan, might degrade China's missile capabilities stationed on the Fujian coast.[25] Worse still, Taiwan might consider missile defence a defacto military alliance with the US and based on this perception, declare its independence from China.[26]

Second, the 2001 US NPR outlined plans for a coercive force based on a new TRIAD of unprecedented nuclear and conventional capabilities with the capacity to destroy previously invulnerable targets. This is problematic, according to Tian Jingmei, of the Arms Control Division of the IAPCM, because the 'new TRIAD blurs the distinctions

[21]Liu Jieyi, statement at the 4th China-US conference on arms control, disarmament and non-proliferation, 14 March 2002 http://www.fmprc.gov.cn/eng/wjb/zzjg/jks/cjjk/2622/t15427.htm [accessed 20 June 2011]
[22] Sun Xiangli, 'Zhongguo he zhanlue xingzhi yu tedian fenxi', [China's Nuclear Strategy: Nature and Characteristics] *Shijie jingji yu zhengzhi* [World Economics and Politics] No.9, September 2006, pp. 23-29.
[23] Li Bin, 'The Effects of NMD on Chinese Strategy', *Jane's Intelligence Review*, March 2001, pp. 49-52; and Li Bin and Wu Rui, 'The Impact of US Regional and Global Nuclear Policies on China- a strategic perspective', presented at the 'Prospects for East Asia nuclear Disarmament' Workshop in Tokyo, Japan, 11-12 March 2004, p. 7.
[24] Li Bin, Zhou Baogen and Liu Zhiwei, 'China will have to respond', *Bulletin of the Atomic Scientists*, Vol. 57, No. 6, 2001, pp. 25-28.
[25] International Institute for Strategic Studies, *The Military Balance 1999-2000* (London: IISS, 1999-2000), p. 171.
[26] Kori Urayama, 'China Debates Missile Defence', *Survival*, Vol. 46, No. 2, Summer 2004, pp. 123-142.

between nuclear weapons and conventional weapons, making it more likely that the US would employ nuclear forces'.[27] Furthermore, as retired PLA General Pan Zhenqiang has suggested, this could undermine the credibility of China's no-first-use (NFU) policy by introducing new scenarios whereby the US might use tactical nuclear weapons over Taiwan or conventional weapons against China's ICBM silos.[28]

Third, there was little to no room for arms control in Bush's nuclear plan. Indeed, US arms control officials in the Bush administration were reported to 'detest the CD'.[29] By 2001, Bush had rejected several treaties, including the CTBT and Anti-Ballistic Missile Treaty (ABM). The Chinese particularly lamented the loss of the ABM, which they considered a 'cornerstone of strategic stability'.[30] In May 2002, the US and Russia signed the Strategic Offensive Reductions Treaty (SORT, otherwise known as the Moscow Treaty), but this treaty was ambiguous and open-ended, based on asymmetric reductions, all reversible and favourable to the US.[31] From 2003 onwards, written negotiated treaties were, in the words of the US Secretary of Defense, 'ancient history'.[32] China considered these developments problematic, devaluing the arms control and non-proliferation pillars of nuclear order. Whereas the US had played a positive role in encouraging China's growing engagement with nuclear order in the 1990s, now the US threatened to have the

[27] Tian, 'The Bush Administration's Nuclear Strategy and its Implications for China's Security', p. 6.
[28] Pan Zhenqiang, 'On China's No First Use of Nuclear Weapons', Pugwash Conferences on Science and World Affairs, 15 November 2002, http://www.pugwash.org/reports/nw/zhenqiang.htm [accessed 2 June 2009]
[29] Wade Boese, 'Chinese concession fails to end UN Disarmament Conference's stalemate', *Arms Control Today*, October 2003.
[30] *Xinhua*, 'China urges preservation of ABM Treaty', 21 February 2001.
[31] National Defense Resources Council, 'The Moscow Treaty's hidden flaws', February 2003, http://www.nrdc.org/nuclear/moscow/moscflaw.asp [accessed 20 November 2008]
[32] Garamone, 'Rumsfeld Details DoD Goals'.

opposite effect.[33] China also feared that US actions might have wider spill-over effects, with other states leaving or losing confidence in the nuclear order.[34]

In summary, the 2000s began with a series of challenges to nuclear order, from proliferation crises to institutional deadlock and changes in US nuclear policy. From the Chinese perspective, the unilateral turn in US nuclear policy was especially destabilising, devaluing arms control and non-proliferation efforts, as well as re-fashioning traditional ideas of nuclear deterrence. More concretely, Bush's nuclear plan threatened not only China's deterrent but also Beijing's preferred vision of a more multilateral nuclear order.

Nuclear Strategy: moving beyond retaliation?

In light of the challenges above, China could be expected to have reconsidered its nuclear strategy based on retaliation. However, a review of China's nuclear strategy in the 2000s, during which Chinese leadership was transferred from Jiang Zemin to Hu Jintao, suggests continuity rather than change. Only slight, though significant, changes in Chinese declaratory policy emerged, alongside a new internal debate. Here, China's response to changes in US nuclear posture will be considered in terms of declaratory policy, internal debates and force modernization.

Declaratory Policy

From 2000-2003, China offered more transparency regarding the direction and scope of its nuclear weapons strategy. Indeed, for the first time, China's 2000 defence white paper openly stated that its nuclear forces were intended for deterrence, declaring that 'China maintains a small but effective nuclear counterattacking force in order to deter

[33] Medeiros, *Reluctant Restraint*, p. 175.
[34] Li Bin, 'China: Weighing the costs', *Bulletin of the Atomic Scientists*, Vol. 60, No.2, March/April 2004, pp. 21-23.

possible nuclear attacks by other countries'.[35] At a press briefing in Beijing on missile defence in 2001, Chinese Ambassador Sha Zukang pointed to 'existing mutual deterrence' between China and the US, stressing that 'we are against NMD, not because we intend to threaten the security of the U.S. with our nuclear weapons. We just hope that the existing mutual deterrence between the two countries can be preserved'. [36] Then, in 2001, Sha spoke of China's nuclear arsenal as the smallest and least advanced among the five nuclear powers. This estimation was reiterated in 2004, suggestive perhaps that China's nuclear forces numbered less than 200.[37] Overall, this transparency about the size of the Chinese arsenal, and the open embrace of nuclear deterrence could perhaps be understood as part of a wider effort by China to suggest that it should not be a target of or reason for the unilteral turn in US nuclear strategy.

In the later part of the decade, China continues to offer more detail on its nuclear strategy in defence white papers and through ad-hoc comments made by senior Chinese political and military leaders. In this regard, China's 2006 defence white paper highlighted a 'self-defense nuclear strategy' consisting of two main principles: counter-attack and limited development so as to possess a lean and effective nuclear deterrent.[38] Here, counter-attack implies retaliation and thus reinforces the policy of no-first-use, while a lean and effective force commits China to the limited development of its nuclear arsenal. These terms also featured in China's 2008 defence white paper, which dedicated an entire section to nuclear doctrine, planning during a crisis, and retaliation after a nuclear attack. According to the 2008 paper, should China come 'under a nuclear threat, the nuclear

[35] Information Office of the State Council of the People's Republic of China, *China's National Defense in 2000*, http://eng.mod.gov.cn/Database/WhitePapers/2000.htm [accessed 2 January 2011]
[36] Statement by Ambassador Sha Zukang at a NMD briefing, Beijing, China, 14 March 2001.
[37] On this see, Jeffrey Lewis, 'Nuclear numerology Chinese style', *Arms Control Today*, Letters to the Editor, March 2005; and Jeffrey Lewis, *The Minimum Means of Reprisal, China's Search for security in the Nuclear Age* (American Academy of Arts and Sciences, Cambridge: Massachusetts, 2007), p. 54.
[38] Information Office of the State Council of the People's Republic of China, *China's National Defense in 2006* http://eng.mod.gov.cn/Database/WhitePapers/2006.htm [accessed 2 January 2011]

missile force of the Second Artillery Force will…get ready for a nuclear counterattack'.[39] In addition to white papers, in the last two years, a growing number of comments have been made by Chinese officials and the PLA reinforcing counter-attack and self-defence. In 2010, at the Nuclear Security Summit in Washington DC, President Hu Jintao reiterated China's commitment to a nuclear strategy based on self-defence and no-first-use.[40] After the summit, Retired PLA Major General Xu Guangyu elaborated on nuclear strategy in the *Liberation People's Daily*, stating that 'China resolutely adheres to a defensive nuclear strategy'. For Xu, 'the most basic feature of China's nuclear strategy is to be a deterrent but present no threat'.[41]

The emphasis on retaliation is also reflected in Chinese military studies published in the 2000s, including *Science of Second Artillery Campaigns* (2004),[42] *The Science of Military Campaigns/Operational Studies* (2000 and 2006), *Science of Military Strategy* (2005)[43] and a study in 2001/2 by Xue Xinglin, of China's National Defense University, titled *Campaign Theory Study Guide*.[44] All these documents argue that China's nuclear strategy should be focused on prevention, survival and retaliation. No mention is made of tactical nuclear weapons or offensive war-fighting capabilities. Instead, these internal documents highlight the need for a second strike force capability, incorporating the principle of 'striking after the enemy has struck'. Emphasis is placed on the survivability of nuclear forces, on self-protection, as well as signalling so as to retaliate in a timely

[39] Information Office of the State Council of the People's Republic of China, *China's National Defense in 2008*, http://www.gov.cn/english/official/2009-01/20/content_1210227.htm [accessed 2 January 2011]
[40] *Xinhua*, 'Chinese president urges concerted action to enhance nuclear security', 14 April 2010.
[41] Chris Buckley, 'China military paper spells out nuclear arms stance', *Reuters*, 22 April 2010.
[42] Renmin Jiefangjun [People's Liberation Army], *Di er paobing zhanyi xue* [Science of Second Artillery Campaigns] (Beijing: Jiefangjun Chubanshe, 2004), pp. 297-316.
[43] Peng Guangqian and Yao Youzhi, eds., *The Science of Military Strategy* (Beijing: Military Science Publishing House, 2005).
[44] For more on these studies, see Evan Medeiros, 'Evolving Nuclear Doctrine' in Paul J.Bolt and Alfred S. Willner, eds., *China's Nuclear Future,* (London: Lynne Rienner, 2006), p. 76, ft. 43; and M. Taylor Fravel and Evan S. Medeiros, 'China's Search for Assured Retaliation, the Evolution of Chinese Nuclear Strategy and Force Structure', *International Security*, Vol. 35, No. 2, Fall 2010, pp. 75-80.

manner to a first strike.[45] In *Operational Studies*, three tasks for China's nuclear forces are outlined: a willingness to retaliate, the ability to ride out a nuclear attack, and to respond to a nuclear attack.[46]

Internal Academic Discussions of Strategy

Beyond declaratory policy, changes in US nuclear policy sparked a wider 'inside debate about the future nuclear policy in China'.[47] This debate, among civilian and military analysts in China, offers an additional lens through which to interpret contemporary Chinese nuclear strategy.

In the early 2000s, a diverse set of positions emerged from these discussions. For some, the impact of NMD was deemed as minimal and temporary, to be undone by the next US President.[48] A second view, popular among a small group of experts in Shanghai, argued that no-first-use should be discarded,[49] contending that 'if conventional weapons are used against Shanghai or Beijing…this might justify a nuclear response'.[50] In response to NMD, this group argued that China should develop up to a thousand ICBMs. A third position, representative of the majority of Chinese analysts, called for measured improvements to the existing strategy of uncertain retaliation. PLA General Pan argued that NMD was technically unfeasible and therefore no-first-use would remain a credible aspect of China's strategy.[51] Tsinghua University Professor Li Bin suggested China simply

[45] Medeiros, 'Evolving Nuclear Doctrine', pp. 63-64.
[46] Quoted in Lewis, *Minimum Means of Reprisal*, p. 42.
[47] Kristensen et. al, *Chinese nuclear forces and US nuclear war planning*, p. 32.
[48] See Tompkins, 'How US Strategic Policy is Changing China's Nuclear Plans'; and Wang Fan, 'Nature of Preemption', *Beijing Review*, 30 January 2003, pp.11-12.
[49] In 2005, Major General Zhu Chenghu, a former dean at China's National Defence University, sparked debate in the US when he suggested, in a personal remark, that China perhaps ought to consider using nuclear weapons in a conventional crisis over Taiwan. The specific comment was: 'if American's draw their missiles and position-guided ammunition onto the target zone on China's territory, I think we will have to respond with nuclear weapons'. See Ting Wai, The Potential Flashpoint: Taiwan in Paul Bolt and Alfred Willner, eds., *China's Nuclear Future,* (London: Lynne Rienner, 2006), pp. 143-166; and Bruce G. Blair, 'General Zhu and Chinese Nuclear Preemption', *China Security*, No. 1, 2005, pp. 15-22.
[50] Tompkins, 'How US Strategic Policy is Changing China's Nuclear Plans'.
[51] Pan, 'On China's NFU of Nuclear Weapons'.

consider developing mobile missiles and countermeasures to NMD so as to maintain 'a stable if asymmetric nuclear relationship with the US'.[52] A war-fighting strategy was considered costly, in terms of security, economics and image. It would also require a drastic shift in modernization plans.

After the mid 2000s, innovative ideas entered the internal debate. These ideas can be roughly divided into two camps. In the first camp, a number of PLA officers and scientists started to call for a more flexible and credible form of deterrence, based on the development of nuclear weapons with the potential for a tactical role, as well as sea and air based nuclear forces.[53] A leading voice in this regard was former deputy Second Artillery Corps (SAC) commander, Zhao Xijun, whose work shed light on circumstances under which no-first-use might be abandoned: in response to a conventional attack on nuclear targets in China; a change in declaratory nuclear policy to bolster leverage in a crisis, for instance over Taiwan; and when national survival is at stake.[54]

In the second camp, which represents the majority view, emphasis was placed on the distinctiveness of China's nuclear strategy by refusing to attach traditional labels such as minimal deterrence to strategy, emphasising instead China's reliance on no-first-use, as well as notions of retaliation and limited development.[55] A leading voice here was Li Bin, for whom China's nuclear strategy has always been based on the concept of 'counter-coercion' (*fanhe weiya* 反核威压).[56] This concept does not entail war-fighting capabilities,

[52] Li, 'The effects of NMD', p. 52.
[53] See, for instance, Zhang Peimin, 'Ruhe fazhan zhanlue weishe shou' [How to develop the means of strategic deterrence] *Junshi xueshu* [Military Art] 2004, p.34.
[54]Zhao Xijun, *She zhan: daodan weishe zongheng tan* [Intimidation Warfare: a comprehensive discussion of missile deterrence] (Beijing: Guofang Daxue Chubanshe, 2003), pp. 42-8, p. 160 and p. 173.
[55] Wang Zhongcun, *Hewuqi heguojia hezhanlue* [Nuclear weapons, nuclear powers and nuclear strategy] (Beijing: Xiandai Chubanshe, 2007), pp. 214 and 217. See also Lora Saalman, 'How Chinese analysts view arms control, disarmament, and nuclear deterrence after the cold war', in Cristina Hansell and William C. Potter, eds., *Engaging China and Russia on Nuclear Disarmament*, CNS Occasional Paper, No. 15, 2009, pp. 47-71.
[56] Li Bin, 'China's nuclear strategy', paper presented at the Carnegie International Nonproliferation Conference, Washington DC, 25-26 June 2007.

but instead works with no-first-use and defending China through the threat of retaliation.[57] According to counter-coercion, China need not reach a condition of assured destruction with the US in order to achieve stable deterrence. Instead, China need only be able to retaliate with a few ICBMs. China's nuclear forces can thus remain limited but still deter.

Other voices in this camp include Sun Xiangli of IAPCM, Xia Liping of Tongji University and Major General Yao Yunzhu of the PLA Academy of Military Sciences. In their respective work they have sought to emphasis continuity as well as uniqueness in China's nuclear strategy, based on limited forces, restraint in military modernization and no-first-use. For Sun, China's military modernization has always been limited and focused on the development of mobile ICBMs. [58] Similarly, Xia has argued that China's lean and effective approach to modernization is one of 'utmost restraint'. Moreover, strategy has evolved from countering nuclear blackmail to a minimum type deterrence strategy.[59] For Yao, China's nuclear force is based neither on denial nor punishment;[60] instead it rests on the 'advantage of uncertainty' not the traditional 'show of force'.[61] Crucially, then, China is 'willing to accept vulnerability as its NFU policy indicates'.[62] Limited development is also possible because for China, deterrence is based not just on numbers but also on the credibility of counterattack and the survivability of forces.[63]

Military Modernization

A third lens through which to examine China's nuclear strategy is the status and future projection of its nuclear force in the context of military modernization. Indeed, in

[57] Li Bin and Nie Hongyi, 'Zhong Mei zhanlue wending xing de kaocha' [Analysis on the strategic stability between China and the US] *Shijie jingji yu zhengzhi* [World Economics and Politics] No. 2, 2008, pp. 13-19.
[58] Sun, 'China's Nuclear Strategy: Nature and Characteristics', pp. 23-29.
[59] Xia Liping, 'Lun Zhongguo he zhanlue de yanjiang yu goucheng', [On the structure and evolution of China's nuclear strategy] *Dangdai yatai* [Contemporary Asian Pacific] No. 4, 2010, pp. 124-5.
[60] Yao Yunzhu, 'Chinese nuclear policy and the future of minimum deterrence', *Strategic Insights*, Vol. 4, No.9, 2005.
[61] Yao Yunzhu, 'China's perspective on nuclear deterrence', *Air & Space Power Journal*, Spring 2010, pp. 28-29.
[62] Yao, 'Chinese nuclear policy and the future of minimum deterrence'.
[63] Yao, 'China's perspective on nuclear deterrence', p. 29.

2009, General Jing Zhiyuan, commander of SAC, emphasised the need to modernise in order to maintain an effective and retaliatory nuclear force.[64] Yet, throughout this period, the US has remained concerned about the ambiguity over the scope, pace and purpose of China's military modernization. In 2005, there were even reports of infighting between the Pentagon and senior administration officials over this issue.[65]

At present, it is estimated that China has around 240 nuclear warheads, making it one of the smallest nuclear arsenals in the world.[66] China's nuclear deterrent largely rests on 20 land-based ICBMs, the DF-5 series first deployed in the 1980s, based in two locations, with the warheads stored separately. This reflects a low-alert status. In 2008, two land mobile solid fuel ICBM systems, the DF-31 and DF-31A, were deployed. The DF-31A missile series has a range of 12,000 km and could potentially support multiple warheads and penetration aids.[67] Beyond ICBMs, China has 12 DF-4, and 50-100 DF-3 and D-21 intermediate range ballistic missiles, suggesting a more effective deterrent at a regional level, with reference to Taiwan.

So far, modernization plans have centred on the deployment of the DF-31 and DF-31A. China has also invested in countermeasures against NMD, for example infrared and stealth technology, and in 2008, China made public a system of underground tunnels, known as the 'Great Wall nuclear counterattack project', to ensure the survivability of its

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[64] Jing Zhiyuan and Peng Xiaofeng, 'Jianzhe zhongguo tese zhanlue da diangdan budui' [Building a strategic missile force with Chinese characteristics] *Qiushi* [Seeking Truth] No. 3, 2009; see also *Xinhua*, 'Top nuclear generals: "strategic deterrence" enhanced in information age, 2 February 2009, http://news.xinhuanet.com/english/2009-02/02/content_107508492.htm and *Xinhua*, 'China to modernize military whule pursuing peaceful development', 20 January 2009, http://news.xinhuanet.com/english/2009-1/20/content_106888075.htm [both accessed 2 May 2009]

[65] Wade Boese, 'US unsure of Chinese military modernization aims', *Arms Control Today*, September 2005.

[66] Robert Norris and Hans Kristensen, 'Chinese nuclear forces 2011', *Bulletin of the Atomic Scientists*, Vol. 67, November 2011, pp. 81-87. However, estimates can vary. On this see Jeffrey Lewis, 'The Ambiguous Arsenal', *Bulletin of the Atomic Scientists*, Vol. 61, No.3, May/June 2005, p. 54.

[67] Gregory Kulacki, 'China's nuclear arsenal: status and evolution', Union of Concerned Scientists, May 2011, http://www.ucsusa.org/assets/documents/nwgs/UCS-Chinese-nuclear-modernization.pdf [accessed 20 June 2011]

force.[68] Efforts have also focused on the development of a JL-2 SLBM.[69] Chinese nuclear naval forces currently consist of a single submarine, the Xia, a noisy submarine, of medium range capacity, currently out of operation. In the late 1980s, China began to develop a new submarine, the Type 094 Jin class (with global range) and Type 093 (with regional range). The Type 094 Jin class will likely carry 16 JL-2 single warhead SLBMs (with 7,200 to 8,000 km range). However, at present China has no deployed SLBMS and the 094 Jin class and JL-2 SLBMs are reportedly encountering technical problems.[70]

Based on current modernization plans, then, it would seem that China is only modernising the means to deliver its nuclear warheads by replacing older, liquid-fuelled ballistic missiles with mobile solid-fuel missiles. It does not seem to be designing, testing, or producing any new nuclear designs. Moreover, in spite of modernization efforts, serious weaknesses in its arsenal remain, notably the lack of an early warning system, the decision to forgo placing multiple warheads (MIRVs) on missiles, and the failure to deploy 094 Jin class and JL-2 SLBMs.[71] In addition, Zhang Hui of Harvard University has recently claimed that China, having halted production of highly enriched uranium and plutonium in the 1990s, has one of the smallest stockpiles of fissile material among the nuclear weapons states, with limited reserves for making new nuclear weapons.[72]

Given these weaknesses, pessimists tend to point to non-nuclear aspects of China's military modernization as threatening, in particular advanced conventional weaponry, such as short range ballistic missiles (DF-11 and DF-15), anti-ship ballistic missiles (DF-21C and DF-21D), land attack cruise missiles (DH-10), stealth technology and an air-craft

[68] Russell Hsiao, 'China's "Underground Great Wall" and Nuclear Deterrence', *China Brief*, Vol. 9, Issue 25, 2009, pp.1-2.
[69] Li and Wu, 'The Impact of US Regional and Global Nuclear Policies on China,' p. 7.
[70] Kristensen, 'Chinese nuclear forces 2011', p. 84.
[71] International Institute for Strategic Studies, *The Military Balance 2008*, (London: IISS, 2008), p. 361.
[72] Zhang Hui, 'China's HEU and Plutonium Production and Stocks', *Science & Global Security*, Vol. 19, No. 1, 2011, p. 83.

carrier.[73] Space is another area of concern following the PLA's successful Anti-Satellite Missile Test (ASAT) on 11 January 2007.[74] In this vein, Descisciolo has noted the potential benefits of ASAT testing in improving ICBMs and targeting.[75]

However, China's nuclear force modernization indicates no drastic deviation from a strategy based around retaliation. As Li Bin and Wu Rui argue, China seeks to maintain a strategic balance rather than numerical and qualitative parity with the US.[76] In other words, China is not attempting to match US nuclear forces and is quite eager to avoid an arms race with the US.[77] In 2010, Chinese Foreign Ministry spokeswoman Jiang Yu reiterated China's commitment to limited development, telling journalists that Beijing 'exercises extreme restraint over developing nuclear weapons and we will continue to maintain our nuclear power at the lowest level, only for national security needs'.[78]

In summary, Chinese approaches to nuclear strategy and force modernization have remained remarkably unchanged despite the challenges posed by the unilateral turn in US nuclear posture. In declaratory policy, Chinese nuclear strategy has become more transparent and from internal debates a majority view has emerged arguing that China should maintain the capacity to retaliate, albeit of a more assured kind.

Cautious Engagement with Nuclear Order

China has also used the arms control and non-proliferation regime to voice its concern over not just US nuclear policy but wider institutional and proliferation challenges

[73] Andrew Scobell, David Lai and Roy Kamphausen, eds., *Chinese Lessons from Other People's Wars* (Washington DC: Strategic Studies Institute, 2011), p. 210.
[74] Ashley J. Tellis, 'China's Military Space Strategy', *Survival*, Vol. 49, No. 3, 2007, pp. 41-72 and Gregory Kulacki and Jeffrey Lewis, 'Understanding China's Antisatellite Test', *The Nonproliferation Review*, Vol. 15, July 2008, pp. 335-47.
[75] Dominic Descisciolo, China's space development and nuclear strategy, in Lyle J Goldstein and Andrew S. Erickson, eds., *China's Nuclear Force Modernization*, (Newport: Naval War College Papers, 2005), p. 58.
[76] Li Bin and Wu Rui, 'The Impact of US Regional and Global Nuclear Policies on China- a strategic perspective', paper presented at workshop on Prospects for East Asia nuclear Disarmament, Japan, 2004.
[77] Rosemary Foot, 'Chinese strategies in a US hegemonic global order', *International Affairs*, Vol. 82, No. 1, 2006, pp. 77-94.
[78] Quoted in 'China Vows "Extreme Restraint" in Development of Nukes', *NTI Global Security Newswire*, 4 May 2010.

facing nuclear order. Indeed, institutional paralysis and proliferation crises have arguably deepened mid-way through the decade, particularly following the drastic failure of the NPT Review Conference in 2005[79] and North Korea's nuclear tests in 2006 and 2009. In response to these developments, China has adopted a mixed approach. Two aspects of this behaviour will be explored here: continued emphasis on multilateral efforts, highlighting growing Chinese concern over counter-proliferation and pre-emption in tacking proliferation issues; and a 'wait and see' approach to the FMCT and CTBT.

Multilateral Efforts

Initially, from 2000-2005, numerous Chinese officials like Ambassador Zhang Yishan called for international efforts to repair the nuclear order and maintain global strategic balance.[80] Calls were also made by Chinese experts and officials for a ban on the development of new nuclear weapons designs.[81] According to Chinese Ambassador for Disarmament, Hu Xiaodi, 'no research and development work should be conducted into low-yield nuclear weapons or "mini-nukes" aimed at probable battlefield use' and efforts should be made to prevent an arms race in space.[82] China's white papers on non-proliferation and arms control in 2003,[83] 2005[84] and 2007[85] referred directly to the shifts

[79] John Simpson and Jenny Nielsen, 'The 2005 Non-Proliferation Treaty Review Conference: Mission Impossible?' *The Nonproliferation Review*, Vol. 12, No. 2, pp. 1-23 and Harald Muller, 'The 2005 NPT Review Conference: Reasons and Consequences of Failure and Options for Repair', No.31, Weapons of Mass Destruction Commission, August 2005.
[80] Zhang, Statement at the Conference on Facilitating the entry into force of the CTBT.
[81] Li Bin, 'China: A Crucial Bridge for the 2005 NPT review Conference', *Arms Control Today*, January/February 2005 and Statement by the Chinese Delegation to the 2nd PrepCom for 2005 NPT RevCon, 'Nuclear Disarmament and Reduction of the Danger of Nuclear War', 30 April 2003.
[82] Hu Xiaodi, statement at the 2nd Session of the Preparatory Committee for the 2005 NPT Review Conference.
[83] Information Office of the State Council of the People's Republic of China, *China's Non-Proliferation Policy and Measures* 3 December 2003, http://www.china.org.cn/english/2003/Dec/81312.htm [accessed 3 March 2008]
[84] Information Office of the State Council of the People's Republic of China, *China's Endeavour for Arms Control, Disarmament and Nonproliferation*, 1 September 2005 http://www.china.org.cn/english/2005/Aug/140343.htm [accessed 20 March 2011]
[85] Ministry of Foreign Affairs of the People's Republic of China, *China's Non-Proliferation Policy and Measures*, 21 May 2007, http://www.fmprc.gov.cn/eng/wjb/zzjg/jks/kjlc/fkswt/t410729.htm [accessed 2 March 2008]

that had taken place in US nuclear strategy, with the 2003 paper stating that 'unilateralism and double standards must be abandoned, and great importance should be attached and full play given to the role of the United Nations'.[86]

China reaffirmed commitments to institutional aspects of nuclear order, reforming national regulations on export control,[87] entering into dialogue with international export control groups like the Wassenaar Arrangement and even joining the Nuclear Suppliers Group (NSG) in 2004.[88] During this period, China also deepened its participation in bilateral security dialogues with a number of developed countries, including the US, culminating in an 'experts talk' between both countries on nuclear strategy in Washington DC in 2009.[89] In addition, China was actively engaged in promoting non-proliferation and arms control norms. According to a senior Chinese official, Xiaodi Hu, 'these norms are good for everyone, including China'.[90] For example, in 2003 China became host of the Six Party Talks to resolve the North Korean nuclear crisis;[91] sponsored a seminar on arms control and disarmament with the United Nations; signed a joint declaration in 2004 on

[86]Stephanie Lieggi, 'A decade of Chinese Arms Control: a survey of progress ahead of Bush's visit to China', Center for Nonproliferation Studies, 18 November 2005. China's 2008 defense white paper also, for the first time, included a chapter on arms control and disarmament.

[87] See Stephanie Lieggi, 'From Proliferator to Model Citizen? China's Recent Enforcement of Nonproliferation- Related Trade Controls and its Potential Positive Impact in the Region', *Strategic Studies Quarterly*, Summer 2010, pp. 39-62; and Dr. Gary K. Bertsch, 'China's Strategic Trade Controls and U.S.-China Cooperation on Nonproliferation', testimony before the U.S.-China Economic and Security Review Commission on China's Proliferation and the Impact of Trade Policy on Defense Industries in the United States and China, 12 July 2007.

[88] Paul Kerr, 'China stresses common approach with Bush administration's non-proliferation policy', *Arms Control Today*, January/February 2004 and Ding Ying, 'Keeping Arms Under Control' interview with Liu Jieyi, *Beijing Review*, 30 December 2004, pp. 12-15.

[89]The author benefitted from a number of interviews with experts in the US and China on this issue: in Washington DC, 9 June 2010 (No.17), 7 June 2010 (No. 40), 17 June (No. 45), and 21 June 2010 (No. 39); in Monterey, 12 May 2010 (No. 55); and in Beijing, 31 August 2009 (No. 46) and 1 July 2011 (No. 61). See also Bonnie Glaser, 'US-China Relations: Chock-full of Dialogue: SED, Human Rights, and Security', *Comparative Connections*, April 2008; and Shirley Kan, 'US-China Military Contacts: Issues for Congress', *Congressional Research Service*, 6 August 2009, pp. 25-26.

[90] Hu Xiaodi quoted in Ann Kent, *Beyond compliance: China, international organizations, and global security*, (Stanford: Stanford University Press, 2007), p. 90.

[91] Howard M. Krawitz, 'Resolving Korea's Nuclear Crisis: Tough Choices for China', *Strategic Forum*, No. 201, 2003.

non-proliferation and arms control with the European Union;[92] and in 2005, supported UN Security Council resolution 1540 on non-proliferation.[93]

Of the above commitments, China's decision to host the Six Party Talks represented an active form of engagement in defending the non-proliferation pillar of nuclear order.[94] In tackling this crisis, the international community initially pinned considerable pressure and hope on China to turn this threat to nuclear order around. In hindsight, this reflected an inflated reading of China's influence over North Korea.[95] Nevertheless, on this issue, China considers itself to have made a 'significant contribution to the stability of the Northeast Asian situation'.[96] Thomas J. Christensen, former Deputy Assistant Secretary of State for East Asian and Pacific Affairs during the Bush administration, adds that 'almost none of the progress to date in the talks would have been possible without China's active engagement in the process'.[97] More specifically, in late 2006 and early 2007, China exerted economic pressure on North Korea which led to the disablement of its nuclear facilities at Yongbyon. China's assertiveness in the mid 2000s came amid sharp reaction to North Korea's testing of a nuclear weapon in 2006, for which Beijing reportedly received only a

[92] Joint Declaration of the People's Republic of China and the European Union on Non-proliferation and Arms Control', 9 December 2004, http://www.fmprc.gov.cn/eng/wjdt/2649/t173749.htm [accessed 20 October 2011]
[93] Chinese Foreign Ministry, Report of China on the implementation of United Nations Security Council resolution 1540 (2004), May/June 2005, http://www.fmprc.gov.cn/eng/wjb/zzjg/jks/kjfywj/t196944.htm [accessed 20 October 2011]
[94] Statement by Ambassador Cheng Jingye on the Korean Peninsula Nuclear Issue at the IAEA Board of Governors Meeting, 17 November 2011.
[95] For more, see Scott Snyder, *China's rise and the two Koreas, politics, economic and security* (London: Lynne Rienner, 2009), pp.2-9 and Chapters 5, 6 and 7.
[96] Shen Dingli, 'China plays a bigger role in proliferation control' *Xinhua*, 29 December 2008; *Xinhua*, 'DPRK official China plays an important role in denuclearization', 27 June 2008; and Shi Yinhong, 'China and the North Korean nuclear problem, diplomatic initiative, strategic complexities, and relevance of security multilaterism', in Wu Guoguang, eds., *China Turns to Multilateralism, Foreign Policy and Regional Security* (London: Routlege, 2007), pp. 90-103.
[97] Thomas J. Christensen, 'Shaping the choices of a rising China: recent lessons for the Obama administration', *The Washington Quarterly*, Vol. 32, No. 3, July 2009, pp. 93-4. See also John Lewis and Robert Carlin, 'Negotiating with North Korea, 1992-2007', Center for International Security and Cooperation, Stanford University, February 2008, http://iisdb.stanford.edu/pubs/22128/Negotiating_with_North_Korea_1992-2007.pdf [accessed 20 March 2010]

20 minute warning.[98] China subsequently supported UN Security Council Resolution 1695, which imposed technology transfer and financial sanctions on North Korea, and Hu Jintao labelled the test a 'flagrant' (*hanran* 悍然) act that China was resolutely against.[99] These represented strong words from China and a serious effort to uphold the non-proliferation norm. Since then, the Six Party Talks have been suspended, and North Korea conducted a second test in 2009. This time, China responded by voting in favour of UNSCR 1874 but refrained from using similar diplomatic language. Instead, China has called for the resumption of talks but has received criticism, particularly in the US, for deepening its economic and political ties to North Korea and for not adopting a stronger stance on sanctions to isolate and pressure the regime back to the negotiating table.[100]

In contrast, on the Iranian nuclear issue, China has abstained from active involvement. In fact, for some, China's lack of action represents a step backwards in terms of its engagement with the non-proliferation regime, with Beijing deliberately delaying and weakening the effect of sanctions on Iran, in particular UNSCR 1929, which applied a fourth round of sanctions in June 2010.[101] China remains unconvinced of Iranian nuclear weaponisation efforts, and considers sanctions a poor tool in countering weaponisation efforts if they indeed exist.[102] Chinese analysts like Shen Dingli argue that should harder evidence emerge of Iranian nuclear weapons development, China will be placed in an

[98] *Reuters*, 'North Korea says conducted nuclear test' 9 October 2006. On this assertiveness more generally, see International Crisis Group, 'China and North Korea: Comrades Forever?', Crisis Group Asia Report N°112, 1 February 2006.
[99] Heungkyu Kim,'The Sino-North Korean Relationship at the Crossroads', in Haksoon Paik and Seong-Chang Cheong, eds., *North Korea in Distress, Confronting Domestic and External Challenges* (Seoul: The Sejong Institute, 2009), pp.192-3.
[100] Zhang Hui, 'Ending North Korea's nuclear ambitions: the need for stronger Chinese action', *Arms Control Today*, July/August 2009 and International Crisis Group, 'Shades of Red: China's Debate over North Korea', Asia Report No. 179, 2 November 2009, p.20.
[101] Thomas J. Christensen, 'The advantages of an assertive China, responding to Beijing's Abrasive Diplomacy', *Foreign Affairs*, Vol. 90, Issue 2, March/April 2011, pp. 54-67.
[102] Author interview, Monterey, 20 November 2011 (No.12).

increasingly difficult position.[103] So far, however, China has sought to emphasise the pursuit of multilateral E3+3 (China, France, Germany, Russia, the UK and US) negotiations to resolve this issue, insisting throughout on the sovereign right of all countries to nuclear energy.[104] As will be argued later here, on this issue China is constrained by a number of important domestic interests. More fundamentally, however, Beijing sees the Iranian nuclear question through a different lens to Washington, attributing the crisis to a number of mistakes in US foreign policy, from the 1979 revolution to Bush labelling Iran part of 'axis of evil'; as well as what China perceives to be genuine concerns in Iran over security, particularly vis-à-vis Israel.[105] Moreover, given that Beijing officially remains unconvinced of Iranian nuclear weaponisation efforts, this means that it does not share the same sense of urgency over this issue (and the implied challenge it poses to nuclear order) as the US.

China's dislike of sanctions as a tool to combat nuclear proliferation extends beyond the North Korean and Iranian issue. In a general sense, China considers sanctions unnecessarily intrusive and ineffective tools, all part of the counter-proliferation strategy, to curtail nuclear weapons development.[106] China's decision not to participate in the Proliferation Security Initiative (PSI), launched by the Bush administration in 2003, also

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[103] Shen Dingli, 'Iran's Nuclear Ambitions Test China's Wisdom', *The Washington Quarterly*, Vol. 29, No. 2, Spring 2006, pp. 55–66**.** The latest IAEA report on Iran, though damming, was still not strong enough to turn Beijing's position. In fact, as a recent *Xinhua* article reveals, China and Russia sought, unsuccessfully, to postpone the IAEA report. See 'Chuan E Zhong fandui gongkai Yilang he baogao' [Russia-China make public their opposition to the Iran IAEA report], 26 October 2011, http://news.xinhuanet.com/world/2011-10/26/c_122201177.htm [accessed 20 January 2011]

[104] Wu Hailong, China's Permanent Representative to the UN office in Vienna, remarks in *Xinhua*, 4 February 2006, http://news.xinhuanet.com/world/2006-02/04/content_4135558.htm [accessed 20 January 2011] in which he states that 'China has, does, and always will advocate diplomatic discussion as the path to a proper resolution of the Iranian nuclear issue'. See also International Crisis Group (ICG), 'The Iran Nuclear Issue: The View From Beijing', *Asia Briefing*, No. 100, 17 February 2010.

[105] John W. Garver, *China and Iran: ancient partners in a post-imperial world*, Chapter Six, (Washington: University of Washington Press, 2006) and John W. Garver, 'Is China playing a dual game in Iran? *The Washington Quarterly*, Vol. 34, No.1, July 2011, pp. 75-88.

[106] Shen Dingli, 'Can sanctions stop proliferation?', *The Washington Quarterly*, Vol. 31, No. 3, 2008, pp. 89-100.

reflects its attitude to coercive sanctions.[107] Like sanctions, PSI acts as a pre-emptive/counter-proliferation measure by interdicting ships at sea suspected of transporting dual use sensitive technology and equipment. China objects to the PSI on the grounds that it is a selective group led by the US, acting on shady international legal grounds, and targeting specific ships. It also bypasses the UN Security Council and prioritises the use of force to counter nuclear proliferation.[108] In essence, from the Chinese perspective, by promoting double standards and embedding discrimination into nuclear order, PSI is counter-productive to the goal of non-proliferation.[109]

Reservations over FMCT and CTBT

Elsewhere during this period, in relation to treaty commitments, China approached with caution negotiations towards an FMCT, initially linking its position to a treaty banning weapons in space (known as PAROS).[110] Indeed, in the early part of the decade, prevention of an arms race in space arguably became the main goal of China's arms control and non-proliferation policy, overshadowing all other aspects. Between 2000 and 2004, China even abandoned efforts to achieve an international NFU agreement instead issuing working papers to the CD for the completion of PAROS.[111] According to Medeiros, in linking PAROS to an FMCT, the Chinese were 'intentionally obstructionist' and driven

[107]Chinese Foreign Ministry Website, 'The Proliferation Security Initiative', undated, http://www.fmprc.gov.cn.eng/wjb/zzjg/jks/kjlc/fkswt/t410725.htm [accessed 20 January 2011]
[108] See Rosemary Foot, 'Selective or Effective Multilateralism? Chinese Perspectives on a US-led Proliferation Security Initiative', Effective Multilaterism: through the looking glass of East Asia, unpublished paper presented at a joint international conference between Fudan University and the University of Oxford, 11-13 December 2008 in Shanghai, China; Ye Roan and Zhao Qinghai, 'The PSI: Chinese Thinking and Concern', *The Monitor*, Vol. 10, No. 1, Spring 2004; Mark Valencia, *Proliferation Security Initiative: Making Waves in Asia*, Adelphi Paper 376 (London: International Institute for Strategic Studies, 2005); and Bates Gill, 'China and nuclear arms control: current positions and future policies', SIPRI, April 2010, http://books.sipri.org/files/insight/SIPRIInsight1004.pdf [accessed 2 May 2010], p. 6.
[109]Remarks by Mr. Zhang Yan, Director General of the Arms Control Department of Ministry of Foreign Affairs, 'Building a Common Approach to the Iran Nuclear Problem', 5 June 2007, China Foreign Affairs University, Beijing, China.
[110] Zhang Hui, 'China and a fissile material cutoff treaty', Kennedy School of Government working paper, 2002, http://belfercenter.ksg.harvard.edu/files/inmm2002_zhang.pdf [accessed 20 January 2009]
[111] *China's Endeavour for Arms Control, Disarmament and Nonproliferation*, 1 September 2005.

by an 'anti-NMD campaign in the Conference on Disarmament'.[112] Eventually, by 2003, China dropped the linkage between the FMCT and PAROS. However, scepticism remains even today over China's commitment to an FMCT. Although China has maintained official support for an FMCT since 1997 and discontinued the production of fissile material, it has refrained from offering an official moratorium. More recently, in June 2009, China has been faulted for delaying negotiations over procedural issues at the CD, where an FMCT is likely to be negotiated.[113]

The CTBT represents another area of relative inaction from Beijing. China has so far failed to ratify this treaty, despite periodically declaring its intention to do so. In 2003, there were high hopes for ratification of the treaty when China set up a national preparatory authority for implementation of the CTBT, established International Monitoring System facilities and co-hosted a regional workshop for the CTBT.[114] However, it would seem that US rejection of the CTBT during the Bush administration was a major set-back that had, according to Chinese official Wang Guangya 'cast a dark shadow on the treaty's entry into force'.[115] Similarly, China remains concerned by the fact that India resides outside the CTBT. Given the perceived high cost of this treaty to China's nuclear deterrent, some have observed that Chinese delegates were actually 'relieved' that US rejection would mean the failure of the treaty and an end to international monitoring.[116] Others have pointed to deficiencies in the treaty, notably the failure to include a NFU

[112] Medeiros, *Reluctant Restraint*, p.206; and Sha Zukang, 'Can BMD Really Enhance Security?' Remarks at the Second US-China Conference on Arms Control, Disarmament and Nonproliferation, 28 April 1999, Monterey, California, http://216.109.75.135/db/china/engdocs/shabmd.htm [accessed 20 January 2011]
[113] Paul Meyer, 'Breakthrough and breakdown at the Conference on Disarmament: assessing the prospects for an FMCT', *Arms Control Today*, Vol. 39, No. 9, September 2009.
[114] *Agence France Presse*, 'Signs that China will ratify test ban treaty as Annan urges cooperation', 3 September 2003; and *Xinhua,* 'Chinese foreign ministry spokesman on CTBT, PSI', 4 September 2003, via *Lexis Nexis.*
[115] Wang Guangya, statement on CTBTO International Cooperation and National Implementation, 6 June 2000.
[116] Keith Hansen, 'CTBT: forecasting the future', *Bulletin of the Atomic Scientists*, Vol. 61, No. 2 March/April 2005, p. 53.

provision and technical difficulties for certain countries to match international monitoring standards.[117]

In sum, during the 2000s, China's engagement with institutional aspects of nuclear order has been cautious and incomplete. On the one hand, China has continued to engage with multilateral aspects of the nuclear order, even going so far as to defend the non-proliferation pillar of that order by hosting the Six Party Talks. Such behaviour reinforces China's long-held vision of a more representative nuclear order. On the other hand, China is not a member of PSI and dislikes the use of sanctions, considering these tools discriminatory and destabilising to nuclear order. China has also remained unhelpful over the Iranian nuclear issue; on the negotiation of an FMCT, which has remained deadlocked at the CD; and the failure, as yet, to ratify the CTBT.

Understanding China's Engagement in the 2000s

China's response to the current crisis in nuclear order has been examined here in terms of Chinese nuclear strategy and the impact of the unilateral turn in US nuclear posture; as well as Beijing's approach to proliferation crises and institutional aspects of nuclear order. On both fronts, China's behaviour reflects continuity rather than change. China maintains a nuclear strategy based on retaliation, and remains engaged with the nuclear order, making clear, as in the past, its preference for a more multilateral order.

In understanding the continued commitment to retaliation in nuclear strategy, domestic variables related to economics and technology are useful. The shift towards assured retaliation is in-keeping with China's original strategy of uncertain retaliation, established in the 1980s. Both strategies maintain no-first-use and demand no drastic change to limited military modernization plans.[118] Consequently it is a cheaper and less

[117] Wang, *Hewuqi heguojia hezhanlue* , p. 304.
[118] Fravel and Medeiros, 'China's Search for Assured Retaliation', pp. 48-87.

provocative strategy compared to war-fighting, which is more likely to spark an arms race with the US. According to Gu Dexin and Niu Yongjun of China's National Defense University, this approach complements national economic and political goals but also reflects a new external strategic reality in which China does not need a strategy based on assured destruction to deter other states. All that is required for deterrence is the ability to threaten a few cities.[119]

China's decision to continue modernising its nuclear forces has both a technical and a security explanation. As to the technical side, China has a history of slow nuclear modernization.[120] It was not until the 1980s, with the completion of an ICBM and SLBM programme, that China for the first time satisfied the very basic requirements of deterrence. Consequently, the starting point for China's modernization is extremely low relative to other nuclear weapons states.[121] In terms of security and safety, all nuclear weapons states at some point have to modernise their nuclear arsenals. In this vein, the UK recently decided to renew its Trident programme, and powerful voices in the US have called for modernization.[122] Ye Ruan, former Vice President of the China Arms Control and Disarmament Association, thus argues that critics of China's modernization ignore 'a universal rule that strengthening and modernizing national defence is a key guarantee for protecting a country's security'.[123]

In understanding China's cautious and uneven engagement with non-proliferation and institutional aspects of nuclear order in the 2000s, considerations of external security

[119] Cited in Medeiros, 'Evolving nuclear doctrine', p. 58.
[120]The SLBM project was set for completion by 1967 (but pushed back to 1973 and not finished until 1988).The ICBM project, initially set to be complete by 1972 remained unfinished until 1981.
[121]Jeffrey Lewis, 'Chinese nuclear posture and force modernization', *The Nonproliferation Review*, Vol. 16, No. 2, July 2009, p. 204.
[122] Former US Secretary of Defense, Robert Gates, 'Nuclear Weapons and Deterrence in the 21st Century', speech given at the Carnegie Endowment for International Peace, Washington DC, 28 October 2008; and Ian Kearns, 'Beyond the United Kingdom: trends in other nuclear armed states', Discussion Paper one of the BASIC Trident Commission, British American Security Information Council (BASIC), November 2011.
[123] Ye Ruan, 'China's Nuclear Policy', *INESAP Information Bulletin*, No. 24, December 2005, p. 23.

are especially relevant. China's initial switch in focus to PAROS in the early 2000s, and the linking of this to an FMCT, perhaps reflected genuine concern over the weaponisation of space.[124] Since then, China's lack of assertiveness and progress over FMCT negotiations and CTBT ratification reflects wider long-term security concerns: given China's limited stockpile of fissile material an FMCT would likely place far-reaching restrictions on the future size and scope of China's nuclear arsenal.[125] Similarly, CTBT ratification could prove restrictive because China has a limited amount of nuclear testing data at its disposal relative to the original five nuclear weapons states.[126] In addition, shifts in US nuclear strategy have created an external security environment not conducive to deeper institutional commitments. For example, neither the US nor India have ratified the CTBT. More generally, from the Chinese perspective, the shift to pre-emption and counter-proliferation in US nuclear weapons policy (with the growing use of sanctions and mechanisms like PSI) reflects a negative trend moving away from a multilateral nuclear order to an order based on nuclear hegemony.

Elsewhere, China's decision to host the Six Party Talks can be understood initially in terms of fears of US military strikes against North Korea in 2003 when the regime withdrew from the NPT; the continuing rationale that North Korea's nuclear and missile activities prompts US theatre missile defence plans in the Northeast Asia; and in the longer-term, the potential loss of a security buffer, were the North Korean regime to fail, to US armed forces stationed in South Korea. In addition, internal security concerns might

[124] Lewis, *Minimum Means of Reprisal*, p. 184.
[125] Li Bin, 'China' in Banning the Production of Fissile Materials for Nuclear Weapons: Country perspectives on the Challenges to a Fissile Material (Cutoff) Treaty, (International Panel on Fissile Materials: Princeton, NJ, 2008), p. 8.
[126] This is because China has conducted only a small number of nuclear tests (45), equal in number to the UK but far less than the US (1,032), Russia/former Soviet Union (715) and France (210). See Comprehensive Test Ban Treaty Organization, 'Nuclear Testing', 2009, http://www.ctbto.org/nuclear-testing/history-of-nuclear-testing/nuclear-testing-1945-2009/page-7-nuclear-testing-1945-2009/ [accessed 20 January 2012] and Nuclear Threat Initiative (NTI), China nuclear test list, undated, http://cns.miis.edu/archive/country_china/coxrep/testlist.htm [accessed 12 April 2009]

have contributed to the decision to host the talks, since regime collapse in North Korea would likely lead to a humanitarian crisis and the influx of refugees into northern regions of China such as Dandong.[127] Similarly, since 2009, external and internal security concerns account for the toning-down in China's assertiveness over this issue, with Beijing prioritising future relations with the North (and its new leadership) and stability on its border in Dandong over the denuclearisation of the peninsula.[128]

Variables associated with image offer additional insight into China's decision to host the Six Party Talks in 2003. As host, China assumed a leadership role in the region on this issue, and indicated its support for non-proliferation, reassuring its non-nuclear neighbours.[129] Similarly, as with security concerns, image initially served as a motivating factor for action, but they have since had the opposite effect. Where once the Six Party Talks had pride of place in China's foreign policy record, with the stalling of talks since 2009 and the intransigence displayed by North Korea, this issue has become an irritant and a disappointment to the Chinese government. Over Iran, image concerns may not explain China's policy though they can be used to justify it, where Beijing has sought to reinforce the peaceful right to nuclear energy and in the process appeal to non-aligned states, as well as encourage an international multilateral approach to solving this issue.[130] However, China's lack of action over the Iranian nuclear crisis suggests that image is insufficient in accounting for its behaviour. Instead, considerations of national economic development, in

[127] On these security considerations, see Yoichi Funabashi, *The Peninsula Question: a chronicle of the Second Korean nuclear crisis* (Washington DC: Brookings Institution, 2007), pp. 320-325; Anne Wu, 'What China whispers to North Korea', *The Washington Quarterly*, Vol. 28, No. 3, 2005, pp. 35-48; and Christopher W. Hughes, 'North Korea's nuclear weapons: implications for the nuclear ambitions of Japan, South Korea and Taiwan', *Asia Policy*, No. 3, January 2007, pp, 75-104.
[128] Christensen, 'The advantages of an assertive China', pp.57-58.
[129] See *Jiefangjun Bao*, 'Zhongguo zhanxian fuzeren daguo xingxiang' [China reveals its image as a responsible power] 29 September 2006, at http://news.xinmin.cn/domestic/opinion/2006/09/29/77894.html [accessed 20 January 2011] and Carla Freeman and Drew Thompson, 'The Real Bridge to Nowhere: China's Foiled North Korea Policy', Working Paper, United Institute for Peace, May 2009, p. 29.
[130] Author interview, Monterey, 5 December 2011 (No. 12).

particular extensive investments in Iranian energy resources, have constrained China.[131] Some analysts have even suggested that a nuclear Iran is in China's interest, preventing US control of Persian Gulf oil, and that sanctions inadvertently benefit China by providing an economic vacuum of low competitiveness for China to fill.[132]

In summary, it would seem that self-interested concerns related to security and economic development shed important analytical light on the cautious nature of China's engagement: whether this be for deeper treaty commitments, where an FMCT and ratified CTBT would place greater restrictions on China's limited nuclear arsenal and stockpile; or in opposition to tough sanctions on North Korea and Iran, where the former might alienate relations and contribute to regime collapse on its borders, and the latter might damage Chinese commercial and energy investments deemed critical to national development. On a more positive note, considerations of international image still prove influential in driving Chinese engagement, for instance in the decision to host the Six Party talks in 2003. However, it should be noted that in assuming this role, one of the best examples of positive Chinese engagement with nuclear order in the 2000s, China's action did not undermine self-interests related to security. In fact, it would seem that where self-interests might conflict with considerations of non-proliferation, as they have done on the Korean peninsula nuclear question since 2009, the former is likely to win out.[133] However, this is not to say that China's level of engagement with the nuclear order boils down to whether it is in its interest to engage positively or not with that order. The reality is a lot more complicated. Both Chinese action on multilateral issues of a universal nature, as well as inaction elsewhere, for instance over PSI, reflect a preference driving Chinese engagement since the 1980s for a more representative nuclear order.

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[131] Willem Van Kemenade, *Iran's Relations with China and the West: Cooperation and Confrontation in Asia* (The Hague: Clingendael Papers, No. 24, 2009), p.15.
[132] International Crisis Group, 'The Iran Nuclear Issue: The View from Beijing', p.6.
[133] For more see Foot and Walter, *China, the United States, and Global Order*, p. 161.

China and Nuclear Order Today

In the late 2000s, several initiatives have emerged in an effort to either repair or reconstitute global nuclear order. The first initiative, with worldwide appeal, at least among governmental elites in most nuclear weapons states, is a 'nuclear spring' initiated by US President Obama in 2009.[134] Chiefly focused on restoring confidence in nuclear order, 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 treaty between the US and Russia, and a Nuclear Security Summit. Added to this, the NPT Review Conference in May 2010 fared much better than the previous one in 2005.[135] A second and third initiative call respectively for 'global zero' and a 'nuclear weapons free world'.[136] Of these initiatives, the first is focused on shoring up the existing nuclear order, whereas the second and third seek to transform nuclear order into a non-nuclear order.

China's response to these efforts has largely been positive, welcoming the Obama agenda and the call for a world free of nuclear weapons. [137] However, for Beijing, the idea driving these initiatives, global nuclear disarmament, is an old one. As early as the 1950s, China outlined its support for disarmament by promoting the *Stockholm Appeal*, and

[134]See remarks by the US President in Prague, Czechoslovakia, 5 April 2009, http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered/ [accessed 10 April 2009]

[135]William Potter, Patricia Lewis, Gaukhar Mukhatzhanova and Miles Pomper, 'The 2010 NPT Review Conference: Deconstructing Consensus', CNS Special Report, 17 June 2010.

[136]George Schultz, William Perry, Henry Kissinger and Sam Nunn, 'Toward a nuclear free world', *Wall Street Journal*, 4 January 2007.The nuclear free world idea has support in the UK, Japan and Australia, but in France, the idea is vehemently rejected. On the 'global zero' project, see: http://www.globalzero.org/ [accessed 20 June 2010]. An alternative view in support of nuclear deterrence was made by NATO military commanders John Shalikashvili, Klaus Naumann, Lord Inge, Henk van den Breeman and Jacques Lanxade in Ian Traynor, 'Pre-emptive nuclear strike a key option, Nato told', *The Guardian*, 22 January 2008.

[137] Kong Guang and Yao Yunzhu, 'Wu hewuqi shijie- yundong pingxi' [Analysis on the Campaign for a Nuclear Weapons Free World] *Shijie jingji yu zhengzhi* [World Economics and Politics] No.9, 2009, pp. 73-80; Shen Dingli, 'Toward a Nuclear Weapons Free World: A Chinese Perspective', *Lowy Institute*, November 2009, pp. 73-80; and Jing Dong-Yuan, 'Chinese Perceptions of the Utility of Nuclear Weapons, the prospects and potential problems in disarmament', *IFRI Proliferation Papers*, 2010.

supporting Soviet disarmament proposals, even calling for a world disarmament conference on this topic in 1963 and 1964. Moreover, since 1964, disarmament has remained a key component of its declaratory nuclear policy.

China has nevertheless taken this opportunity to further underscore its strong support for nuclear disarmament. For instance, in September 2009, at a special session on nuclear weapons issues at the United Nations General Assembly, Chinese President Hu Jintao outlined a 'five-point nuclear proposal' to realise a world free of nuclear weapons. These five points included: a need to 'maintain global strategic stability and vigorously advance nuclear disarmament'; 'abandon the nuclear deterrence policy based on first use'; 'consolidate the nuclear non-proliferation regime, 'the right of all countries to the peaceful use of nuclear energy'; and lastly, develop 'strong measures to enhance nuclear security'.[138] In intellectual circles, Chinese academic experts have also contributed to the debate by focusing on de-emphasising the value of nuclear weapons and offering a number of steps to realise this goal: negative security assurances, an international NFU treaty, de-alerting nuclear forces, withdrawing nuclear forces deployed abroad (in the process re-examining extended nuclear deterrence), and an end to production of new nuclear weapons.[139] Absent from these discussions is the question of timing and at what numbers Beijing would feel comfortable to participate in multilateral negotiations to reduce nuclear arsenals.[140] China has instead insisted that the US and Russia bear 'special responsibility' as the oldest and largest nuclear weapons states to lead nuclear reductions, and that for China, as a small

[138] 'Nuclear Security Summit kicks off in Washington Hu Jintao delivers an important speech', transcript, Chinese Foreign Ministry Affairs website, 14 April 2010; and 'Chinese president offers five-point proposal for safer world', *People's Daily Online*, 25 September 2009.
[139] Preparatory Committee for the 2010 Review Conference of the Parties to the Treaty on the Non-proliferation of nuclear weapons, 'nuclear disarmament and reduction of the danger of nuclear war', working paper, NPT/CONF.2010PC.I/WP.46, 7 May 2007, paragraph 12. For an overview of this debate, see 'Is China a reliable partner in non-proliferation?', *China Analysis*, No. 19, August 2008 http://www.ecfr.eu/page/-/china/China-Analysis-19-EN.pdf [accessed 20 September 2008]
[140] Li Bin, 'China's potential to contribute to multilateral nuclear disarmament', *Arms Control Today*, March 2011.

nuclear weapons state, it would be unrealistic and damaging to the credibility of it nuclear deterrent to engage too early in this process.[141] In this light, China has been a somewhat reluctant participant in the P5 conferences on multilateral arms control that have taken place in London (2009) and Paris (2011). [142]

Elsewhere, China has invested in the nuclear security aspect of the Obama agenda, using it as a platform to improve its image as a nuclear weapons state. [143] Since 2006, China has been a founding member of the Global Initiative to Combat Nuclear Terrorism and has engaged in a plethora of related activities: ratifying the amendment of the Convention on the Physical Protection of Nuclear Materials in 2009; the International Convention for the Suppression of Acts of Nuclear Terrorism in 2010, and signing the Practical Arrangement in the Field of Nuclear Security with the IAEA.[144] At the 2010 Washington Nuclear Security Summit, a Memorandum of Understanding was signed between the US National Nuclear Security Administration and China's Atomic Energy Agency on nuclear security. This resulted in a safeguards centre in Asia, which opened in January 2011 to train custom officials on the detection of the trafficking of nuclear materials. [145]

Despite China's embrace of the nuclear security agenda, Beijing considers the more ambitious aspects of the Obama agenda and the goal of a nuclear free world problematic. Three sets of concerns drive China's position. First, given the difficulties in

[141] On US and Russian, 'special responsibility', see Ministry of Foreign Affairs of the People's Republic of China, 'Position on nuclear disarmament', http://www.fmprc.gov.cn/eng/wjb/zzjg/jks/kjlc/hwt/t577613.htm [accessed 20 June 2011]

[142] Author interviews, Beijing, 30 May 2011 (No.4), 12 July 2011 (No. 36), 25 July 2011 (No. 64) and 27 July 2011 (No. 23). On this conference more generally, see UK Foreign and Commonwealth Office, 'Nuclear weapon states discuss nuclear disarmament obligations', 7 July 2011, http://www.fco.gov.uk/en/news/latest-news/?view=PressS&id=627529382 [accessed 20 January 2012]

[143] Zhang Tuosheng, 'Fei guojia xingwei ti de he kuosan yu he anquan' [Nuclear Proliferation of Non-state Actors and Nuclear Security] *Waijiao pinglun* [Foreign Affairs Review], Vol. 27, No. 3, 2010, pp. 22-30.; and Li Hong, 'Fuza duoyuan hua de quanqiu de anquan' [Nuclear Security Environment in a Complicated and Pluralistic World] *Heping yu Fazhan* [Peace and Development], Vol. 3, 2010, pp. 17-22.

[144] Li Hong (on behalf of the Fissile Materials Working Group), 'Chinese nuclear security practices', *Bulletin of the Atomic Scientists*, 22 July 2011.

[145] 'U.S., China Agree to Expand Nuclear Security Ties', *NTI Global Security Newswire*, 20 January 2011; and U.S. National Nuclear Security Administration release I, 19 January 2011, http://nnsa.energy.gov/mediaroom/pressreleases/chinacenterofexcellence01.19.11[accessed 20 January 2011]

passing the new START agreement in the US, it is unclear to the Chinese whether Congress is fully sold on the agenda put forward by the Obama administration, and the associated steps that would need to be taken, such as ratification of the CTBT.[146] Second, the Obama agenda itself does not seem up to the task. More concretely, the 2010 US NPR does not embrace possible steps to realise a NWFW, such as NFU.[147] The 2010 NPR also highlights a growing reliance on missile defence and advanced conventional capabilities (for example Global Prompt Strike, GPS) as a way to de-emphasise nuclear weapons. As Lavina Lee points out, such an approach acts as a double-sword: missile defence and systems like GPS are considered by Beijing as destabilising to a small nuclear deterrent based on NFU, thereby complicating its participation in multilateral arms control and disarmament.[148] Furthermore, Chinese analysts fear that US extended nuclear deterrence commitments continue to perpetuate nuclear deterrence, undermining the disarmament goal.[149] Third, more widely, China has experienced an erosion of confidence in US commitments to arms control and non-proliferation following the US decision to withdraw from the ABM treaty in 2003, the failure to ratify the CTBT and a growing preference for counter-proliferation. China sees these developments as negative and not conducive to realising a world without nuclear weapons.

In particular, China points to the 2008 US-India civilian nuclear deal[150] as counterproductive to repairing the nuclear order and its position within that order. For China, the deal was problematic from many angles. First, the deal exposed double

[146] Author interviews, Beijing, 14 September 2009 (No. 54) and 13 June 2011 (No. 35).
[147] Li Deshun, 'Aobama zhengfu he taishe pinggu baogao pouxi' [An Analysis of Obama Administration's Nuclear Posture Review] *Waijiao Pinglun* [Foreign Affairs Review], Vol. 27, No. 3, 2010, pp. 31-39.
[148] Lavina Lee, 'Beyond Symbolism? The US Nuclear Disarmament Agenda and Its Implications for Chinese and Indian Nuclear Policy', Cato Institute, Foreign Policy Briefing, 8 February 2011. This argument was reiterated in an interview with the author, Beijing, 30 October 2010 (No.35).
[149] Saalman, 'How Chinese analysts view arms control, disarmament and nuclear deterrence after the cold war', p. 53.
[150] In 2008, the deal --first announced in 2005, in a joint US-India statement on nuclear cooperation-- was approved by the NSG, IAEA Board of Governors and US Congress.

standards exercised by the US since the exemption made by the Nuclear Suppliers Group (NSG) was only granted to India, a country that has not signed the NPT or the CTBT.[151] Despite this, the US deemed India sufficiently responsible to bend NSG rules.[152] Second, given that the deal went some way to grant India recognition as a responsible nuclear weapons state, it undermined not only nuclear order but also China's status as the sole recognised nuclear weapons state in the region.[153] Third, more widely, the deal has had a damaging effect on the non-proliferation regime, undermining for instance the CTBT since the deal is weak on testing and safeguards. In turn, this has added momentum to the pursuit of similar deals such as the Pakistan-China nuclear reactor deal, a deal also likely to undermine the institutional basis of nuclear order.[154] Fourth, the US-India deal was perceived in Beijing as part of a wider attempt by the US to contain China. According to Shen Dingli the deal demonstrates that 'the United States has decided that using India to check and balance China is of more importance than non-proliferation'.[155] In addition, from a security standpoint, the deal will also allow India to complete its nuclear TRIAD and develop minimal deterrence against China.[156]

In sum, China has welcomed initiatives to repair the nuclear order in the late 2000s, in particular efforts related to nuclear security. However, Beijing remains unconvinced by

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[151] Wade Boese, 'US-Indian Nuclear Deal Reaching NSG Brink', *Arms Control Today*, September 2008.
[152] Fan Jishe, 'Mei yun he xieyi chuangguan nan, guoji luntan'[US-India nuclear agreement in difficulty] *People's Daily*, 1 September 2008, http://world.people.com.cn/GB/1030/7752791.html [accessed 2 September 2008]
[153]Satu Limaye, 'Sino-Indian relations: the four disconnects', PacNet No. 7, January 2008; and author interview, Beijing, 22 July 2011 (No.24).
[154] On this, see Oliver Meier, 'The US-India nuclear deal, the end of universal non-proliferation efforts?', *Internationale Politik und Gesellschaft* (IPG), No. 4, 2006, http://www.fes.de/ipg/inhalt_d/pdf/Meier_GB.pdf [accessed 20 January 2011]; *Xinhua*, 'China hopes nuke deal with India to help maintain nonproliferation system validity', 8 September 2008, http://news.xinhuanet.com/english/2008-09/08/content_9846420.htm [accessed 12 September 2008]; Sharon Squassoni, 'The U.S.-Indian deal and its impact', *Arms Control Today*, July/August 2010; Sharad Joshi, 'The China-Pakistan Nuclear Deal: A Realpolitique Fait Accompli', *NTI Brief*, 11 December 2011.
[155] Quoted in Chris Buckley, 'China likely to swallow anger over India nuclear deal', *Reuters*, 29 August 2007.
[156] Charles D. Fergusen, 'India's planned nuclear TRIAD: seeking a "credible deterrence"', April 2008, *Arms Control Today*; and author interview, Beijing, 30 October 2010 (No.35).

the level of US commitment to this task, and is concerned by a number of destabilising developments, most notably the 2008 US-India nuclear deal, which poses challenges not just to the future of nuclear order but also to China's own position in that order.

Conclusion

In the 2000s, global nuclear order has faced a number of challenges, from proliferation crises and institutional deadlock, to changes in US nuclear policy. Of these, changes in US nuclear policy have proved particularly problematic for China in terms of its own nuclear deterrent but also for fear that the nuclear order was moving away from the more representative order it preferred, towards a unilateral order based on US nuclear hegemony. Despite these difficulties, China has contributed to maintaining nuclear order by remaining committed to a nuclear strategy based on retaliation, and through continued engagement with institutional aspects of the nuclear order, albeit at a sometimes chequered pace.

China's decision to continue with a retaliation based nuclear strategy was a positive development, reinforcing the deterrence pillar of nuclear order. Aspects of Bush's nuclear plan, such as NMD and the new TRIAD, undermined China's nuclear deterrent. Despite this, Chinese approaches to nuclear strategy and modernization have remained remarkably unchanged. In declaratory policy, Chinese nuclear strategy has become more transparent and from internal debates a majority view has emerged to remain with retaliation, albeit of a more assured kind. More crucially, as with uncertain retaliation, assured retaliation is innovative, offering an alternative way of thinking about deterrence to notions of assured destruction. In essence, China continues to demonstrate that a nuclear weapons state can have credible nuclear deterrence at low numbers and under a condition of no-first-use.

In addition, China has continued to engage with multilateral aspects of nuclear order, even going so far as to defend the non-proliferation pillar of that order by hosting the Six Party Talks in 2003. However, China has refrained from participation in the PSI

and the promotion of sanctions to combat nuclear activities in Iran and North Korea, considering these part of a counter-proliferation and pre-emption strategy that is destabilising to nuclear order. Beyond proliferation crises, China's caution has extended to negotiations on an FMCT, which has remained stalled at the CD, and the CTBT, which it has yet to ratify. Self-interested domestic considerations of security and economics play a significant role in guiding this inaction. Taken together, China's engagement has both positive and negative implications for nuclear order. On the one hand, China's decision to host the Six Party Talks and remain engaged in a number of multilateral efforts has served to reinforce nuclear order. On the other hand, Chinese inaction over the Iranian nuclear crisis, negotiations towards an FMCT, and CTBT ratification has undermined the non-proliferation pillar of nuclear order.

In the late 2000s, there have been concerted efforts to repair the nuclear order, led by the Obama administration. China supports these efforts and has invested considerably in nuclear security, but remains unconvinced of US commitment given the shift towards counter-proliferation and pre-emption in US nuclear policy and more recently, the 2008 US-India civilian nuclear deal. China is also wary of western efforts to integrate Beijing too early into a multilateral arms control and disarmament process, which it perceives as damaging to its nuclear deterrent. Despite these misgivings, China has taken these initiatives as an opportunity to reiterate its own ideas regarding nuclear deterrence and nuclear disarmament, in particular no-first-use, which might be conducive to realising a world free of nuclear weapons. Placed in wider historical context, since 1949, China has come a long way: from challenging nuclear order and offering its own model during the Maoist era, to promoting a more multilateral nuclear order in the 1980s and 1990s, and ultimately emerging as a pivotal actor in the process of repairing that order in the 2000s.

Conclusion
China and the Global Nuclear Order
中国与全球核秩序[1]

This thesis has traced the evolution of China's nuclear weapons behaviour since 1949 in terms of its engagement in the creation, consolidation and maintenance of global nuclear order. In particular, the focus has been on the methods, motivations and implications driving its engagement. Overall, it has been argued that even before a nuclear order existed, China had an inadvertent hand in its creation, contributing to superpower thinking about how best to build an order, as well as offering its own ideas based on socialist proliferation. Then, in the 1980s and 1990s, China adopted an alternative approach to nuclear deterrence that challenged mainstream strategies such as mutual assured destruction; and joined important institutions, for instance the Non Proliferation Treaty (NPT) in 1992 and the Comprehensive Test Ban Treaty (CTBT) in 1996. In addition, during this period, China labelled itself a middle sized nuclear weapons state and began to promote a new vision for nuclear order: that of a more representative order. China's current engagement, at a time when nuclear order is perceived by many to be broken, is less clear: while China remains committed to important nuclear institutions and a minimal nuclear strategy, Beijing is also wary of deeper commitments, in particular multilateral arms control arrangements that might unfairly constrain its capabilities relative to other nuclear weapons states.

The concept of global nuclear order has proved a useful lens through which to assess the nuclear behaviour of several states as well as global nuclear developments since 1945. This is because it offers a more holistic and historical foundation, beyond the non-proliferation regime, upon which to examine how nuclear arms are governed globally as well as how actors behave in nuclear order. Nuclear order has been defined here in terms

[1] *Zhongguo yu quanqiu hezhixu*.

of four core pillars: nuclear deterrence, arms control, non-proliferation and disarmament. The interaction of these pillars overtime defines the direction and stability of nuclear order, in particular the extent to which the status quo is upheld or a more transformative agenda is pursued. Of these four pillars, deterrence is king because it is intrinsically woven into the history of nuclear order as well as *the* global order. Indeed, despite discussion in the 2000s of a nuclear weapons free world, nuclear deterrence remains a cornerstone of national security policies in major nuclear weapons states, with China openly embracing the term in its 2000 defence white paper.

As a concept, nuclear order is particularly relevant in the Chinese case because so much analysis focuses on narrow and contemporary aspects of China's nuclear behaviour, such as its poor non-proliferation record or the uncertain direction of its military modernization. Furthermore, there is little to no academic analysis in English on China's place in global nuclear history, nor of China's interpretation of that history. Here, the focus has been on China's attitudes and actions vis-à-vis the four core pillars of nuclear deterrence, arms control, non-proliferation and disarmament so as to determine the nature and significance of its engagement with the creation, consolidation and maintenance of nuclear order.

China's Engagement since 1949

The empirical analysis in this thesis of China's engagement with the creation, consolidation and maintenance of global nuclear order has focused on five periods: China's pre-detonation era (1949-1964); post-detonation phase (1964-1976); reform and opening up (1976-89); the post-Cold War period of the 1990s; and the present decade, the 2000s.

In China's pre-detonation period, global nuclear order had yet to emerge. Nevertheless, Maoist China indirectly contributed to superpower thinking regarding how

best to manage nuclear weapons. In particular, Mao's decision to develop nuclear weapons in 1955 and to continue unaided in this quest following the Sino-Soviet split in 1960 represented an indirect form of engagement influencing the superpowers to push ahead with their own ideas for nuclear order, based around non-proliferation. In the early 1960s, China rejected the superpowers' model, which it labelled a nuclear monopoly, and instead offered an alternative model, termed here socialist proliferation. If realised, socialist proliferation would have represented a direct form of engagement with the process of creating nuclear order by promoting proliferation to 'peace loving and socialist countries' contra the superpowers' model. Instead, by 1964, China contributed indirectly to wider thinking about how to construct nuclear order by highlighting discriminatory aspects of the superpower model and offering an alternative model that was more inclusive, appealing to non-nuclear states.

In the post detonation phase, the perceived challenges that China's nuclear test posed for proliferation --namely that it might have a domino effect in the region-- provided added urgency and pressure for the superpower model to emerge as the basis of nuclear order. In the end, China's test did not result in the nuclearisation of the region. However, China's test had additional implications for nuclear order: it validated that order by seeking legitimacy as a nuclear weapons state, and it questioned the order, highlighting the discrimination within it. Lastly, it led to recognition, especially in the US, that China, now a nuclear weapons state, could not be isolated as before and would have to be incorporated into nuclear order.

Towards the end of this period, China began to retreat from nuclear order, affected by the uncertain strategic environment of the time –especially following the 1969 Sino-Soviet border war during which China's nuclear facilities were threatened with attack-- and the nascent stage of its nuclear weapons development. More generally, China's

nuclear behaviour became contradictory. While Beijing openly abandoned socialist proliferation it also provided covert assistance to Pakistan and North Korea, though this had little impact on nuclear order at that time since not much was known about these activities. Essentially, by the mid 1970s, China's focus was elsewhere: on technological development so as to secure the credibility of its nuclear deterrent.

In the era of reform and opening up, China emerged from its self-imposed retreat to engage with nuclear order in two main ways. First, China rejected nuclear deterrence in declaratory policy and developed its first nuclear strategy based not on assured destruction but on 'uncertain retaliation'. Second, China began to engage in institutions of nuclear order, in this regard joining the Conference on Disarmament (CD) in 1980 and the International Atomic Energy Agency (IAEA) in 1984. Crucially, Beijing saw the CD in a different light to past nuclear institutions, such as the NPT, considering the former a more equitable organization based on its unique operational procedures such as the consensus principle. In addition, in the 1980s, China indirectly influenced superpower discussions related to the Intermediate Nuclear Forces (INF) treaty and the Strategic Defense Initiative (SDI) proposed by President Reagan in 1983. In the midst of these discussions, China sought to identify itself as a middle-sized nuclear power, different from the superpowers but comparable to the UK and France. Ultimately, this period marked a turning-point for China, where a new-found confidence in and engagement with institutional aspects of nuclear order underscored, however subtly, a desire for a future nuclear order that would be more representative of its members.

In the 1990s, with the passing of the Cold War, a number of positive developments took place facilitating the consolidation of nuclear order, such as the indefinite extension of the NPT in 1995 and the emergence of the CTBT in 1996. However, these developments cast China's suspected proliferation activities with countries like Pakistan

and Iran in a harsh, negative, light. China was also wary of growing asymmetry in its military capabilities relative to the US. To compensate, China adopted a two-track strategy. First, Beijing sought to bolster the credibility of its deterrent by modernising its nuclear arsenal and improving its nuclear strategy. The emphasis on retaliation in strategy remained in place despite doubts in the West over China's commitment to no-first-use (NFU) in the mid 1990s, and whether strategy should transition to assured retaliation or shift more radically to a warfighting posture. Of the two, assured retaliation reflected the official line. Second, to enhance its legitimacy, China continued to engage with institutional aspects of nuclear order, joining the NPT in 1992 and CTBT in 1996. China's decision to sign the NPT elevated the importance and universality of both the treaty and the non-proliferation norm. Likewise, by signing the CTBT, despite the high costs to the future size and scope of its nuclear arsenal, Beijing displayed a clear commitment to non-proliferation. However, in the late 1990s, changes in the external security environment, notably nuclear tests in South Asia in 1998 and shifts in US nuclear weapons policy, threatened to undermine China's nuclear deterrent. More generally, the future direction of nuclear order was cast into doubt, and there was a sense in China that the very order it had integrated into seemed to be in the process of unravelling.

In the 2000s, global nuclear order has faced a number of challenges: from actual and suspected proliferation crises involving North Korea and Iran, institutional deadlock at the CD, to shifts in US nuclear weapons policy. Of these challenges, changes in US nuclear policy, such as the promotion of National Missile Defense and counter-proliferation, threaten to undermine China's small nuclear arsenal as well as the vision of a more multilateral nuclear order. Despite this, China has remained committed to an emphasis on retaliation in its nuclear strategy, based now on a more assured form of retaliation; as well as continued participation in multilateral institutions, for instance as

host of the Six Party Talks to resolve the proliferation challenge posed by North Korea. However, in other areas, China has adopted a more cautious attitude, with less stabilising results for nuclear order, for instance in delaying negotiations at the CD over a Fissile Material Cut-off Treaty (FMCT) and ratification of the CTBT. China has also refrained from participation in the Proliferation Security Initiative (PSI) and the promotion of tough sanctions to combat nuclear activities in Iran and North Korea, considering these as destabilising to nuclear order. In recent years, the Obama administration has sought to repair nuclear order, and China supports these efforts but remains unconvinced of US commitment, pointing to developments such as the 2008 US-India civilian nuclear deal, which Obama has continued and to some extent has legitimized India as a nuclear weapons state, an outcome not desired by China.

Taken all together, China's most significant forms of engagement with nuclear order include: the decision, first made in 1955, to become a nuclear weapons state and then test an atomic device in 1964; second, the idea of socialist proliferation promoted in the early to mid 1960s; third, internal discussions in the 1980s that led to an enduring emphasis on retaliation in strategy and limited military modernization; and fourth, China's participation in key institutions of nuclear order, such as the CD (1980), NPT (1992) and CTBT (1996).

The first two forms of engagement --nuclearisation and socialist proliferation-- contributed indirectly to wider thinking about how best to construct a nuclear order by countering a perceived nuclear monopoly, with Beijing casting the NPT and Partial Test Ban Treaty (PTBT) as 'scams' intended by the superpowers to stop the spread of nuclear weapons and freeze the nuclear status quo. In promoting the proliferation of nuclear weapons to 'peace-loving and socialist countries', Maoist China appealed more directly to non-nuclear weapons states and highlighted the discrimination behind the superpowers'

ideas. As CCP Chairman Mao stated to a visiting Indonesian delegation on 30 September 1965: 'the two great powers of the world want to monopolize the bomb. We do not listen to them and build it all the same'.[2] Paradoxically, China's test, amid fears in the US that it would spark a cascade of proliferation, inadvertently provided momentum for the superpower model to emerge as the basis for eventual nuclear order.

Later on, China's focus on retaliation in strategy and participation in nuclear institutions contributed to the consolidation of core pillars within nuclear order. For instance, the emphasis on retaliation in strategy contributed to the deterrence pillar by offering an alternative way of thinking to assured destruction, demonstrating that a nuclear weapons state can have credible nuclear deterrence at low numbers and under a condition of no-first-use. In addition, a retaliation-only nuclear strategy reinforces the disarmament pillar of nuclear order by de-emphasising the deterrent value of nuclear weapons and represents a small step towards achieving a world without nuclear weapons, a goal openly promoted by US President Obama since 2009.[3] As for multilateral approaches to arms control and non-proliferation, China's decision to join the CD, NPT and CTBT validated the non-proliferation pillar of nuclear order, elevating both the universality of these treaties as well as the non-proliferation norm.

Overall, then, of the four pillars that constitute global nuclear order: nuclear deterrence, arms control, non-proliferation and disarmament, it is the third pillar, non-proliferation, which emerges as the most important with regards to China's role. China's nuclearisation and promotion of socialist proliferation in the early to mid 1960s

[2]'Mao Zedong zhuxi, Liu Shaoqi zhuxi jiejian Yinni daibiao tuan tanhua jilu (tan yuanzidan wenti, fandui diguo zhuyi wenti, xinxing liliang de huiyi wenti)' [Memo of conversation between Chairman Mao Zedong and Chairman Liu Shaoqi and the Indonesia Delegation (on issues of nuclear weapons, anti-imperialist countries, and the emerging power conference)], 30 September 1965, File No. 105-01917-02, via Chinese MFA, p. 6.

[3] Barack Obama, Remarks by President as delivered, Prague, Czechoslovakia, 4 April 2009, http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered/ [accessed 5 April 2009]

inadvertently contributed to the prioritisation of non-proliferation in superpower thinking regarding nuclear order. Then, from the 1980s onwards, China's engagement with institutions directly and positively contributed to the consolidation of this pillar of nuclear order. Other aspects of China's nuclear behaviour have also engaged, albeit in a more destabilising way, with the non-proliferation pillar, from suspected proliferation practices in the 1980s and 1990s with regards to Pakistan, to Beijing's decision not to enforce tough sanctions on Iran and North Korea.

Beyond non-proliferation, China's alignment with Soviet positions on test bans and nuclear weapons free zones in the 1950s, as well as calls for a world conference on disarmament in 1963 and 1964, underlined Beijing's support in principle for the idea of disarmament. Elsewhere, China's preference for retaliation and limited modernization challenged the deterrence pillar by opting not to pursue assured destruction or a warfighting strategy. In addition, the focus on retaliation reinforced the disarmament element of nuclear order by offering a potential step in the pursuit of a nuclear weapons free world. However, in terms of the arms control pillar of nuclear order, China has played a largely destabilising role. In the 1950s and 1960s, Maoist China was a long-standing critic of treaties like the NPT and PTBT. Later, in the 1980s, China indirectly influenced superpower discussions over the INF and deliberately adopted the title middle sized nuclear power, in part so as to free itself from involvement in multilateral arms control and disarmament processes. Then, in 1996, China signed the CTBT, a costly treaty that acts as an arms control measure from the Chinese perspective. However, Beijing has so far failed to ratify this treaty. In addition, in the early to mid 2000s, China has blocked progress on an FMCT and today is a reluctant participant in the multilateral P5 arms control talks.

The above demonstrates that some types of nuclear behaviour whether intentionally or otherwise, strengthen nuclear order, while others weaken that order. Furthermore, a

state can simultaneously adopt positive and negative forms of engagement and the implications for nuclear order might vary in different historical eras. For instance, in the 1980s and 1990s, China engaged simultaneously in highly stabilising and destabilising forms of nuclear behaviour: joining important nuclear institutions while at the same time transferring contentious technology, such as ring magnets, to Pakistan. Chinese actions also have unintended consequences for nuclear order. A good example is Beijing's decision to develop nuclear weapons and temporarily promote selective proliferation in the early 1960s. Both actions had the inadvertent effect of accelerating the superpower model --to which Beijing was originally opposed-- as the basis for emerging nuclear order.

Understanding China's Engagement

Across the five periods examined, preoccupations with economic development, image, and security represent the dominant variables driving China's engagement with nuclear order. These three variables are interconnected, accounting for Chinese action and inaction as well as contradictory behaviour on specific nuclear issues. Understanding the motivations behind engagement sheds light on the extent to which an action or policy was driven by a desire to shape nuclear order, and whether it was transformative or status quo in orientation.

Economic and technological imperatives are evident in China's early nuclear weapons development and later its military modernization process in the 1990s and 2000s. In the 1950s and 1960s, serious efforts were made by senior Chinese politicians and scientists such as Nie Rongzhen to justify the nuclear weapons programme according to domestic economic development goals. In addition, China was driven by a fear of lagging behind and getting beaten (*luohou jiu yao aida* 落后就要挨打) at the hands of foreign

powers.[4] Later, in the reform era, under the Four Modernizations, the prioritisation of the economy over defence fed into internal debates, resulting in a limited approach to military modernization and an emphasis on retaliation in strategy, approaches that endure today. Finally, it was not until the 1980s, following the completion of intercontinental ballistic missiles and submarine launched ballistic missiles, that China, for the first time, satisfied the basic requirements of nuclear deterrence. Consequently, the starting point for China's military modernization in the 1990s and 2000s was extremely low relative to other nuclear weapons states.

Economic imperatives also carry analytical weight in understanding China's growing participation in nuclear institutions since the 1980s. In part, China joined the NPT and signed numerous bilateral civilian nuclear cooperation agreements, such as the 1985 Nuclear Cooperation Agreement with the US for reasons of economic benefit. Through these agreements, China benefited from significant financial aid and greater access to markets and technology. Today, however, economic considerations constrain China's actions regarding the Iranian and North Korea nuclear crises. On Iran, Beijing considers tough sanctions damaging to commercial and energy investments deemed critical to China's national development. On North Korea, Beijing fears stronger sanctions would lead to the economic and political collapse of the North Korean regime, with damaging economic and security results for China.

Image is the second enduring factor in Chinese nuclear calculations since 1949. Facing growing international isolation during the 1950s and 1960s at forums such as the UN, and even more so following the Sino-Soviet split in 1960, China saw nuclear weapons as crucial in improving its status domestically, regionally and internationally. Indeed, in

[4] Jing Zhang, 'In Quest of Mushroom Clouds: Perspectives from the Chinese side', CSSEO Working Paper No. 148, December 2009, p. 18.

1956, Mao Zedong famously stated, 'if we are not to be bullied in the present-day world, we cannot do without the bomb'.[5] Then, in a speech to PLA officers in 1965, Chen Yi, China's Foreign Minister declared: 'if you can get the twin [*atomic and hydrogen*] bombs out quicker, then your foreign minister --me-- can stiffen his back'.[6] The role nuclear weapons played in affording China greater international status was also made clear by Deng Xiaoping in 1988, stating that: 'if China had not developed the atomic bomb and the hydrogen bomb…China would not have been called an influential country or able to enjoy the international status that it does nowadays. The atomic bomb and the hydrogen bomb demonstrate a nation's capability and are also a symbol of the flourishing and prosperity of a nation and its country'.[7]

Later, China's decision to join institutions like the CD, NPT and CTBT, as well as the decision to host the Six Party Talks in 2003, served to improve its international image and reassure its neighbours of its intentions. Concerns over China's nuclear image were linked in part to protests and pressure from the US, Japan and a number of developing states over its nuclear tests and suspected proliferation activities in the 1980s and 1990s. In regards to the CTBT, protests from the NAM countries acted as a wake-up call for Beijing. Never before had developing countries openly denounced China's nuclear tests to such a degree. The impact of this pressure should not be underestimated since the CTBT was considered by Beijing a costly treaty (were it to have been ratified) in terms of security, seriously limiting the future scope of China's nuclear deterrent.

[5] From Mao Zedong, 'On Ten Great Relations', 25 April 1956, in *Selected Works of Mao Zedong*, Vol. 5, [Peking: Foreign Languages Press, 1977]

[6] Liu Shufa, ed., *Chen Yi nianpu* [Chronology of Chen Yi], Vol. 2, (Beijing: Renmin Chubanshe, 1995), p. 465.

[7] Deng Xiaoping, 'Zhongguo bizhu zai shijie gaokejilingdao dianyouyidushidi' [China must take a place in the high technology field], speech given on 24 October 1988, reprinted in *Deng Xiaoping wenxuan* [Selected Writings of Deng Xiaoping], Vol. 3 (Beijing: Renmin Chubanshe, 1993), Vol. 3, p. 279.

Security considerations have also informed China's nuclear behaviour since 1949.[8] Indeed, of the three variables highlighted here, it is security that explains in large part China's first two forms of engagement: nuclearisation and socialist proliferation. In the 1950s and 1960s, China faced a number of nuclear threats from both the US and USSR, and these served to reinforce China's desire for a nuclear deterrent. For its part, socialist proliferation was intended to counter a perceived nuclear monopoly and bolster the credibility of an overall 'socialist deterrent'. Then, during the reform period, China's experience in the 1969 Sino-Soviet border war—and the potential threat of nuclear war—highlighted to the Chinese an urgent need for a credible second strike force capability. In addition, during this period, China's decision to base nuclear strategy on retaliation reflects an appreciation that a more aggressive strategy, such as warfighting, would be unnecessarily provocative and likely to spark an arms race with the US.

In the 2000s, security concerns explain both Chinese action and inaction. China's decision to host the Six Party Talks can be understood initially in terms of fears of US military strikes against North Korea in 2003 when Pyongyang withdrew from the NPT; the continuing rationale that North Korea's nuclear and missile activities provide for US theatre missile defence plans in Northeast Asia; and in the longer-term, the potential loss of a security buffer, were the North Korean regime to fail and a US-allied South Korea were to take over the whole country. More recently, however, Chinese fears of a North Korean collapse, magnified by the recent death of Kim Jong-il, have made it even more reluctant to take a tough stand on sanctions against North Korea, despite Pyongyang's

[8] However, it would seem that nuclear weapons were never meant to solve security issues, such as over Taiwan. As PLA Marshal Ye Jianying in a talk with military cadres in November 1964 stated: 'nuclear weapons cannot settle conflicts with the imperialists; neither can they change the aggressive nature of the imperialists and reactionaries. They will not retreat from Taiwan, South Korea, South Vietnam, and Japan…our nuclear detonation has not eased the situation along our periphery or made the world more peaceful or tranquil.' See Ye Jianying, 'Further improve the quality of military training', in *Ye Jianying junshi wenxuan* [Selected writings of Ye Jiangying on Military Affairs] (Beijing: Jiefangjun Chubanshe, 1997), p.613.

nuclear and missile tests in 2009. This is because Beijing fears tougher sanctions might lead to regime collapse and a humanitarian crisis on China's northern border. Conversely, security concerns explain China's inaction over the FMCT and CTBT ratification since these are likely to constrain the future scope and size of China's nuclear arsenal.

In sum, what these variables suggest is that China's nuclear behaviour, with the brief exception of socialist proliferation, has rarely been transformative. Instead, China's actions and policies have been driven by other rationales. Of these three variables, economic development was an important driver for two major forms of Chinese engagement: restraint in nuclear strategy and force modernization, as well as participation in nuclear institutions. For its part, security was the main driver in Beijing's decision to develop nuclear weapons and then temporarily promote socialist proliferation. Similarly, image played an important role in China's nuclearisation, and its subsequent participation in institutions. Both economic and security considerations reign at present, accounting for China's inaction over the CTBT and FMCT, as well as China's cautious approach to the Iranian and North Korean nuclear crises.

China's engagement in wider global order

Beyond global nuclear order, China's engagement reflects wider patterns in its international behaviour since 1949. Closely linked to the variables highlighted above, Medeiros notes three enduring diplomatic priorities in Chinese foreign policy: sovereignty and territorial integrity, economic development, and international respect and status.[9]

Initially, as a new state and member of the socialist bloc, the People's Republic of China opted for a policy of 'leaning to one side' thus explaining in part China's decision in the 1950s to side with Soviet positions on arms control and test bans. Then, in the 1960s,

[9] Evan Medeiros, *China's International Behavior, activism, opportunism and diversification* (Santa Monica, CA: RAND, 2009), p.13.

following the Sino-Soviet split, China chose a path of self-reliance, opposed to both the US and USSR. During this period of isolation, China sought to cultivate links with the developing world and when it tested a nuclear device on 16 October 1964, it justified its test as a victory for the third world. As Liu Shaoqi stated on 30 October 1964, 'all oppressed nations and peoples and all peace-loving countries and people have felt elated over the successful explosion of China's first atom bomb, as they hold the view that they, too, have nuclear weapons'.[10] Later, in the 1970s, China's retreat from global nuclear order occurred during a period of transition in China's foreign affairs, with the normalisation of relations with the US, and a policy of 'lean on the other side' cooperating with the US to contain the Soviet Union.[11]

After the Cold War, China's growing participation in nuclear institutions reflected a wider turn to multilaterism in foreign policy,[12] as well as efforts to establish itself as a responsible major power (*fuzeren de daguo* 负责任的大国).[13] Jiang Zemin framed such efforts as part of a wider strategy to rebuild China's international image post-Tiananmen and combat widespread fear developing in the West of China's rise. Linked to this strategy was the new security concept, China's 'peaceful rise' (*Zhongguo heping jueqi* 中国和平崛起), as well as ideas such as 'developing China as a comprehensive power' (*fazhan zonghe*

[10] Quoted in Oran R. Young (b), 'Chinese Views on the Spread of Nuclear Weapons' in Morton H. Halperin, ed., *Sino-Soviet Relations and Arms Control* (Cambridge, Mass., 1967), pp. 31-32.

[11] Relations with the USSR begin to improve from the mid 1980s and normalisation eventually occurred in May 1989. During this period, Deng Xiaoping elaborated a guiding principle for China's foreign policy: *tao guang yang hui you suo zuo wei* 韬光养晦有所作为 a rough translation of this term is 'hide our abilities and bide time, but get things done'. For its relevance today, see Zhu Feng, 'Zai "tao guang yanghui" yu "yousuo zuo wei" zhijian qiu pingheng' [Finding a balance between hiding our abilities biding out time and achieving], *Xiandai guoiji guanxi* [Contemporary International Relations] No.8, 20 September 2008, pp. 27-28.

[12] Liu Huaqiu, 'China will always pursue a peaceful foreign policy of independence and self-determination', speech by Vice Minister of Foreign Affairs Liu in *Qiushi* [Seeking Truth] No. 23, 1 December 1997, pp. 2-9. See also Wu Guoguang and Helen Lansdowne, *China turns to multilaterism, foreign policy and regional security* (London: Routledge, 2008); and Zhang Yongjin, *China in International Society since 1949: alienation and beyond* (Basingstoke: Macmillan, 1998).

[13] Xia Liping, 'China: a responsible great power', *Journal of Contemporary China*, Vol. 10, No. 26, 2001, pp. 17-25; and Rosemary Foot, 'Chinese Power and the Idea of a Responsible State', *The China Journal* , No. 45, Jan. 2001, pp. 1-19.

guoli 发展综合国力) and even 'building a new international order'.[14] In this regard, China began to participate in a number of institutions beyond global nuclear order, for instance by joining the IMF and World Bank in 1980, becoming a formal member of the UNCHR in 1982, and participating in a number of regional organizations such as the Shanghai Cooperation Organization in 1996 and ASEAN +3 in 1997.

By the early to mid 2000s, according to Medeiros and Fravel, Beijing had adopted a 'less confrontational, more sophisticated, more confident, and at times, more constructive approach toward regional and global affairs'.[15] Indeed, in September 2005, US Deputy Secretary of State Robert Zoellick decided it was time to call upon China to be a 'responsible stakeholder' in international affairs.[16] China seemed to take heed, assuming leadership of the Six Party Talks in 2003, and exerting unprecedented pressure on North Korea between 2006 and 2007. Elsewhere, China modified its policy on Sudan, going against a strongly held position of non-interference in internal state affairs.[17]

China's President, Hu Jintao, has framed China's international behaviour around the 'harmonious world' concept (*hexie shijie* 和谐世界) and the pursuit of more 'equitable' –rather than a new-- international order. [18] To this effect, in 2007, Hu spoke of the need 'to make the international order fairer and more equitable'.[19] More recently, in 2011, in reference to the global economy, Hu stated it necessary to 'make the international

[14] For more, see Rosemary Foot, 'Chinese strategies in a US hegemonic global order: accommodating and hedging', *International Affairs*, Vol. 82, No.1, 2006, p. 85 and p. 91; and Wang Gungwu and Zheng Yongnian, eds., *China and the new international order* (London: Routledge, 2008).
[15]Evan Medeiros and Taylor Fravel, 'China's New Diplomacy', *Foreign Affairs*, November/December 2003, pp. 22-35.
[16] Robert B. Zoellick, 'Whither China: From Membership to Responsibility?' Remarks to the National Committee on US-China Relations, Washington DC, 21 September 2005, http://www.ncuscr.org/files/2005Gala_RobertZoellick_Whither_China1.pdf [accessed 2 January 2012]
[17] Thomas J. Christensen, 'The advantages of an assertive China, responding to Beijing's abrasive diplomacy', *Foreign Affairs*, Vol. 90, No.2, March/April 2011, pp. 56-59.
[18]Hu Jintao, 'Build towards a Harmonious World of lasting peace and common prosperity', speech at the Summit Meeting on the 60th Anniversary of the United Nations, 14 September 2005, http://www.china-un.org/eng/zt/shnh60/t212915.htm [accessed 21 January 2012]
[19] Quoted in Medeiros, *China's International Behavior,* p. 49.

economic order more just and equitable'.[20] Such an approach mirrors China's declared preference for a more representative nuclear order. More broadly, it fits with what Schweller and Pu call a 'negotiated order', where China seeks to accommodate and contest US hegemony, not directly challenge it.[21] Indeed, according to Wang Jisi, dean of Beijing University's School of International Studies, it would be foolish for China to 'directly challenge the international order and the institutions favored by the Western world'.[22]

However, in the late 2000s, exactly what China means by an equitable international order, and whether Beijing actively intends to work towards such an order, remains unclear. As for nuclear order, Chinese engagement has been tentative, abstaining on sanctions and blocking the FMCT. China's wider international behaviour has also been unusually combative, notably clashes with the USS *Impeccable* in 2009, as well as increased tension over the South China Sea and maritime disputes with Japan in 2010.[23] Some, such as Swaine, take this behaviour as evidence of a growing assertiveness in China's foreign policy.[24] Others, like Thomas J. Christensen, argue it represents a step backwards, away from assertiveness to behaviour that is reactive and nationalistic.[25] For Christensen, this shift in behaviour is based on over-confidence on the international stage –as a result of China's relatively strong position in the global financial recession-- and insecurity at home. From China's perspective, matters have become more complicated and threatening since 2011 with the Obama administration's so-called 'pivot' towards the Asia-Pacific. Many

[20] Hu Jintao, 'Shift Growth Model to Sustain Economic Development ', remarks at the 19th APEC Economic Leaders' Meeting, Hawaii, 13 November 2011, http://www.chinaembassy.hu/hu/xwdt/t885169.htm [accessed 21 January 2012]
[21]Randall L. Schweller and Pu Xiaoyu, 'After Unipolarity, China's visions of international order in an era of US decline', *International Security*, Vol. 36, No. 1, Summer 2011, p. 66.
[22] Wang Jisi, 'China's Search for Stability with America', *Foreign Affairs*, Vol. 84, No. 5, September/ October 2005, p. 44. A lack of global leadership can be seen in China's refusal to enter into a G-2 partnership with the US, see Elizabeth Economy and Adam Segal, 'The G-2 Mirage: why the United States and China are not ready to upgrade ties', *Foreign Affairs*, Vol. 88, No. 3, May/June 2009, pp. 14-23.
[23] See *The Economist*, 'Discord- China's tough new attitude is both dangerous and counterproductive', 13 January 2011; and Minxin Pei, 'An assertive China: the "new normal"?', *The Diplomat*, 24 November 2010.
[24] Michael D. Swaine, 'Perceptions of an assertive China', *China Leadership Monitor*, No. 32, Spring 2010.
[25]Christensen, 'The advantages of an assertive China', p.59.

within China, and especially within the PLA, perceive this as an attempt by the US to contain China. [26]

Conclusion

For the past two decades, the study of contemporary China has been predominantly forward-looking, focused on the implications of its rise for international affairs. But a look back to China's place in global nuclear history reveals that it had a bigger hand in shaping international nuclear politics than previously thought.[27] This complicates the traditional and somewhat linear narrative on China in the nuclear field: as reckless and ignorant of nuclear matters during the Mao period; irresponsible in the 1980s and 1990s when proliferating nuclear technology to countries like Pakistan; and more recently, a reluctant student of norms such as non-proliferation. According to this view, since opening up to the world, China has been catching-up with mainstream nuclear ideas and integrating itself into nuclear order.

However, this is only half the story. While China has joined key institutions such as the NPT and CTBT in the 1990s, what is often overlooked in western analysis is the degree to which China had alternative and innovative ideas on nuclear issues. Many of these ideas can be traced back as early as the Mao period: from the paper tiger thesis disparaging the significance of nuclear weapons and the promotion of socialist

[26] Remarks by the President in State of the Union Address, Washington DC, 24 January 2012, http://www.whitehouse.gov/the-press-office/2012/01/24/remarks-president-state-union-address [accessed 8 February 2012] *BBC*, 'Barack Obama says Asia-Pacific is "top US priority"', 17 November 2011, http://www.bbc.co.uk/news/world-asia-15715446 [accessed 8 February 2012]

[27] In conducting research for the historical chapters of the thesis, a number of gaps in the literature have become apparent. One relates to the significance of the paper tiger thesis, a concept much dismissed in western literature. Another relates to why the nuclear revolution –so defining in the US-- did not occur in quite the same way in China. For instance, the end of the Second World War in the Pacific is not attributed to the atomic bombings of Japan but to the Soviet invasion of Manchuria. This is important because an argument often used in support of nuclear deterrence is the defining role nuclear weapons played in the Second World War. By re-examining this argument in light of China's own perception of events, one would contribute to a wider effort underway in the nuclear field to delegitimize nuclear deterrence. See Ward Wilson, 'The myth of nuclear deterrence', *The Nonproliferation Review*, Vol. 15, No. 3, November 2008, pp. 421-439; and Ken Berry, Patricia Lewis, Benoît Pélopidas, Nikolai Sokov and Ward Wilson, *Delegitimizing Nuclear Weapons, Examining the Validity of Nuclear Deterrence* (Monterey: Center for Nonproliferation Studies, 2010).

proliferation to counter a perceived nuclear monopoly; to internal debates in the 1980s that led to an emphasis on retaliation in strategy and minimalism in development at a time when other nuclear weapons states were building vast nuclear arsenals.

Moreover, the trajectory of China's engagement has not been straightforward or linear. China initially challenged superpower ideas and offered its own model for nuclear order during the Maoist era; it then abandoned this model and retreated from international nuclear politics. In the 1980s, China outlined its preference for a more representative nuclear order, and today it is considered by many scholars as a pivotal actor in the restoration of nuclear order. The irony here is that while China inadvertently facilitated the emergence of a model for nuclear order to which it was originally opposed, it is now considered pivotal to the restoration of that order. Whether China fully steps up to the role remains to be seen. Its engagement in the late 2000s has been tentative at best. This lack of action reflects not a deliberate agenda to paralyze nuclear order but the perceived high costs of such action for its economy, security and image. In addition, with the exception of socialist proliferation, China does not have a record of transformative forms of engagement. Indeed, despite challenges to its deterrent in the 1990s and 2000s, particularly shifts in US nuclear policy and India's testing of nuclear weapons, Beijing continues to rely on retaliation in strategy, NFU and limited modernization. Thus, as China prepares for a new leader in 2012, dramatic change in the pattern of its engagement with global nuclear order is unlikely.

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