China's Strategic Nuclear Arms Control: Avoiding the "Thucydides Trap"

Stephen J. Cimbala

The "Thucydides Trap" refers to the propensity in history for rising states to challenge putative hegemons or other leading powers for international position, sometimes resulting in war. China's growing military and economic power in the twenty-first century challenges American and Russian leadership on international security issues, including nuclear arms control and nonproliferation. Yet strategic nuclear arms reductions have still proceeded in a two-sided framework of US-Russian negotiations. Despite obvious difficulties, China should be brought into the process of US-Russian nuclear arms reductions because China is rising as a nuclear power and moving beyond its Cold War minimum deterrence posture.

Keywords: deterrence, arms control, China, nuclear weapons, missile defenses, Thucydides Trap, New START, modernization

Introduction

Whether the United States and China can avoid the "Thucydides Trap" involves many issues.¹ One of these is nuclear arms control. The United States and Russia should not continue to restrict their conversations about strategic nuclear arms limitation to a two-way street. China's current and prospective military modernization entitles Beijing to a seat at the table of future Russian-American nuclear arms talks. Among other indicators, China continues to improve the capability of its nuclear ballistic missile

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The "Thucydides Trap" refers to the historical tendency in which challenges, posed by rising powers against existing hegemonic or superior powers, turn into warfare. China's rising economic and military power, together with its political influence in Asia and globally, do not necessarily mean that a war between the United States and China is inevitable. In fact, China's growing nuclear strength could create a situation of mutual deterrence in East Asia, in which neither larger-scale conventional nor nuclear war would be politically advantageous or acceptable. Instead, US-Chinese competition could take the form of economic rivalry supported by military power and diplomatic sagacity. But nuclear deterrence stability in Asia also requires that Russia, the United States, and China must all be included in any enduring nucleararms-control regime for the region.

China as Balancer

As Russian arms-control expert Alexei Arbatov has noted, Beijing's "cautious and multi-vectored" policies "have allowed it to assume the role to which Russia has traditionally aspired – that of a balancer between East and West. In fact, it is Russia, with its new policy of 'Eurasianism,' that has become the East."³ On the other hand, China's political and military objectives in Asia and worldwide differ from those of the United States and Russia, reflecting China's perception of its own interests and of its anticipated role in the emerging world order.⁴

Entering China into the US-Russian nuclear deterrence equation creates considerable analytical challenges for a number of reasons. First, China's military modernization is going to change the distribution of power in Asia, including the distribution of nuclear and missile forces. China's military modernization draws not only on its indigenous military culture, but also on careful analysis of western and other experiences. As David Lai has noted, The Chinese way of war places a strong emphasis on the use of strategy, stratagem, and deception. However, the Chinese understand that their approach will not be effective without the backing of hard military power. China's grand strategy is to take the next 30 years to complete China's modernization mission, which is expected to turn China into a true great power by that time.⁵

China's strategic missile force – the People's Liberation Army Second Artillery Force (PLASAF) – is among the beneficiaries of its military modernization. PLASAF made major strides during the Hu Jintao era, beginning in 2002 when Hu became Secretary General of the Chinese Communist Party (CCP) and President of China. PLASAF's main mission is described in its publications as "dual deterrence, dual operations," responsible for nuclear deterrence and nuclear counterstrikes as well as conventional deterrence and conventional precision strikes.⁶ Chinese military publications specify a number of campaign-deterrence missions that might be undertaken by PLASAF in peacetime or in conditions of crisis or war, including war prevention, escalation control, use of nuclear deterrence to "backstop" conventional operations, and strategic compellence of enemies by means of deterrent actions.⁷

Chinese military modernization and defense guidance for the use of nuclear and other missile forces hold some important implications for US policy. First, Chinese thinking is apparently quite nuanced about the deterrent and defense uses for nuclear weapons. Despite the accomplishments of modernization thus far, Chinese leaders are aware that they are far from nuclear-strategic parity with the United States or Russia. On the other hand, China may not aspire to this model of nuclear-strategic parity between major nuclear powers as the key to avoiding war by deterrence or other means. China may prefer to see nuclear weapons as one option among a spectrum of choices available to deter or fight wars under exigent conditions as well as to support assertive diplomacy and conventional operations when necessary. Nuclear-strategic parity as measured by quantitative indicators of relative strength may be less important to China than the qualitative use of nuclear and other means as part of broader diplomatic-military strategies.⁸

Second, China is expanding its portfolio of military preparedness not only in platforms and weapons, but also in the realm of C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) and information technology. Having observed the American success in Operation Desert Storm against Iraq in 1991, Chinese military strategists concluded that the informatization of warfare under all conditions would predicate future deterrence and defense operations.⁹ China's growing portfolio of smart capabilities and modernized platforms includes, in addition to items previously noted, stealth aircraft, anti-satellite warfare, quiet submarines, "brilliant" torpedo mines, improved cruise missiles, and the potential to disrupt financial markets. As Paul Bracken has noted, the composite effect of China's developments is to make its military more agile – meaning more rapidly adaptive and flexible.¹⁰

The importance of agility instead of brute force reinforces the traditional emphasis in Chinese military thinking since Sun Tzu on the acme of skill as winning without fighting – and if war is unavoidable – getting in the first and decisive blows. It also follows that one should attack the enemy's strategy and his alliances, making maximum use of deception based on superior intelligence and estimation. The combination of improved platforms, command-control, and information warfare should provide options for the selective use of precision-fire strikes and cyberattacks against priority targets, and avoidance of mass killing and fruitless attacks on enemy strongholds.

A third aspect of the Chinese military modernization important for nuclear deterrence and arms control in Asia is the problem of escalation control. Improving Chinese capabilities for nuclear deterrence and for conventional warfighting increases the confidence of Chinese leaders in their ability to carry out an A2/AD strategy against the United States or another power seeking to block Chinese expansion in Asia. This confidence might be misplaced in the case of the United States. The United States is engaged in a "pivot" in its military-strategic planning and deployment to Asia, and toward that end, is developing its doctrine and supporting force structure for AirSea-Battle countermeasures against Chinese anti-access strategy.¹¹

Another aspect of the problem of escalation control is the question of nuclear crisis management between a more muscular China and its Asian neighbors or others. Asia in the Cold War was a nuclear-weapons backwater, since the attention of American and allied NATO policymakers and military strategists was focused on the American-Soviet arms race. The world of the twenty-first century is very different. Europe, notwithstanding recent contretemps in Ukraine, is a relatively pacified security zone compared to the Middle East or to South and East Asia, while post-Cold War Asia is marked by five nuclear weapons states: Russia, China, India, Pakistan, and North Korea. The possibility of nuclear first use, growing out of a conventional war between, say, India and Pakistan, or China and India, is nontrivial, while North Korea poses a continuing uncertainty of two sorts. It might start a conventional war on the Korean peninsula, or the Kim III regime might implode, leaving uncertain the command and control over its armed forces, including nuclear weapons and infrastructure.¹²

The problem of keeping nuclear-armed states below the threshold of first use, or containing escalation afterward, was difficult enough to explain within the more simplified Cold War context. Uncertainties are even more abundant with respect to escalation control in the aftermath of a regional Asian war. Then, too, there is the possibility of a US-Chinese nuclear incident at sea or a clash over Taiwan escalating into conventional conflict, accompanied by political misunderstanding and the readying of nuclear forces as a measure of deterrence. The point is that American and Chinese forces would not actually have to **fire** nuclear weapons to **use** them. Nuclear weapons would be involved in the conflict from the outset, serving as offstage reminders that the two states could stumble into a process of escalation that neither had intended.

There is an important correction or cautionary note that needs to be introduced at this point. Policy makers and strategists sometimes have talked as if nuclear weapons always serve to dampen escalation instead of exacerbate it. This might be a valid theoretical perspective under normal peacetime conditions. On the other hand, once a crisis has begun, and especially after shooting has started, the other face of nuclear danger will appear. Reassurance based on the assumption that nuclear first use is unthinkable may then give way to its becoming very thinkable. As Michael S. Chase has warned, miscalculation in the midst of a crisis is a "particularly troubling possibility" heightened by uncertainty about messages that the sides are sending to one another, and/or by leaders overconfident in their ability to control escalation.¹³

Methodology and Analysis

A. Context

China's geostrategic view and its military modernization do not fit easily into existing models of nuclear conflict. Chinese participation in future evolutions of strategic nuclear arms control, however, will require their military planners to prepare some estimates of the outcomes of nuclear force exchanges; yet nuclear war between China and either Russia or the United States is extremely unlikely. Nevertheless, Chinese as well as American and Russian armed forces will have to plan for unexpected as well as more probable wars. In addition, the nuclear balance matters insofar as China prefers to maintain a secure second-strike capability against the United States or Russia, regardless of the pace of their modernization. The debate within China relative to the modernization of its nuclear force undoubtedly includes arguments about "how much is enough" to accomplish this fundamental mission of assured retaliation under all conditions.

In the discussion that follows, we project Chinese strategic nuclear forces along with those of Russia and the United States to circa 2020-25. There is significant uncertainty about this for China, compared to the United States and Russia, because the latter two powers are tied to New START force deployment levels beginning in 2018. In addition, China's requirements for reconnaissance and early warning, command-control, and targeting are complicated by regional as well as global requirements. NATO and Russia also face regional issues, but NATO and Russia have decades of experience – including former Soviet experience – in assessing one another's nuclear capabilities and intentions as well as in negotiating arms pacts.

Another asymmetry in this triangle is that Russia and China can inflict "strategic" damage on one another, including attacks on military as well as civilian targets, without necessarily using weapons and launchers of intercontinental range. This recognition is one reason why Russian President Vladimir Putin has put forward the idea of Russian withdrawal from the Intermediate Nuclear Forces (INF) Treaty; only the United States and Russia have denied themselves these weapons, while China and other possible adversaries are free to build and deploy them.¹⁴ Another concern is that China is more opaque about declaring its nuclear capabilities than the United States and Russia and, from China's perspective, it has a number of good reasons for being so.¹⁵

B. Analysis

The analysis that follows necessarily aspires to modesty in creating an analytical structure for a three-sided, strategic nuclear arms competition. For this purpose, we hypothesized: (1) American and Russian New START-compliant strategic nuclear forces, and (2) projected Chinese forces for the same time period, admittedly conjectural, but congruent with expert and government studies.¹⁶ In Chart One, we summarize the results of a nuclear

force exchange between Russia and China based on our assumptions about their projected 2020-25 forces. In Chart Two, we provide similar information for a nuclear war between the United States and China. In both cases, the numbers of second-strike surviving and retaliating warheads for each state are summarized under each of four conditions of alertness and launch doctrine: (1) generated alert (Gen) and launch-on-warning (LOW), (2) generated alert, riding out the attack (RO), and then retaliating, (3) day-to-day alert (Day) and launch-on-warning, and (4) day-to-day alert and riding out the attack.

The summaries in Charts One and Two are only illustrative and hypothetical, but nevertheless revealing. China's apparent disinterest in pursuing military-strategic parity with Russia or the United States appears a prudent decision. Although China's prewar projected intercontinentalrange nuclear forces are small compared to those of Russia and the United States, they are not negligible. Against New START or similar US and Russian deployment levels, China should be able to guarantee "minimum deterrence" and even more at the end of the decade. Especially important are improvements in China's mobile missile and ballistic missile submarine force, relative to their survivability against surprise attack. Mobile landbased missiles, as seen from the Chinese perspective, increase force survivability and reduce the incentive to launch on warning or preempt, and thereby reinforce deterrence and crisis stability.

One of the issues that has deadlocked post-New START from Russia's perspective is the NATO plan for deploying missile defenses in Europe, the so-called European Phased Adaptive Approach. China is also concerned about the impact of US global or Asian regional missile defenses on its nuclear deterrent. Therefore, we reanalyzed the outcomes summarized in Charts One and Two above, by calculating the numbers of second-strike surviving and retaliating warheads for each state against opposed missile and air defenses (combined). Since the exact numbers and capabilities of future missile and air defenses are unclear, we established a continuum of possible missile and air defense capabilities, as follows: Phase I, missile and air defenses intercept at least 20 percent of second-strike retaliating warheads; Phase II, at least 40 percent; Phase III, at least 60 percent; and Phase IV, at least 80 percent. Charts Three and Four, immediately below, summarize the offense-defense outcomes for the Russia-China case (Chart Three) and the US-China case (Chart Four).



Chart One: Russia-China: Surviving and Retaliating Warheads, circa 2020-25 Deployment Levels

(1) Russian forces at New START agreed levels



Chart Two: US-China: Surviving and Retaliating Warheads, circa 2020-25 Forces

(2) US forces at New START agreed levels



Chart Three: Russia-China: Surviving and Retaliating Warheads vs. Defenses, circa 2020-25 Deployment



Levels (1) Russian forces at New START agreed levels

Chart Four: US-China: Surviving and Retaliating Warheads vs. Defenses, circa 2020-25 Forces

(2) US forces at New START agreed levels

The results of the simulations summarized in Charts Three and Four, seen above, are interesting in several respects. First, even with defenses deployed by all three states, the United States and Russia maintain relative nuclear advantage over China with respect to sheer numbers of survivable and deliverable second-strike retaliating warheads. Second, on the other hand, neither the United States nor Russia is able to disarm China in a preemptive nuclear attack without suffering unprecedented and unacceptable retaliation. Third, China's active defenses would be supplemented by passive defenses for retaliatory forces, including systems of tunnels for storing and moving mobile land-based missiles.¹⁷

Conclusion

China's growing economic power, political ambitions, and conventional and nuclear force modernization suggest that its inclusion in an Asian nuclear arms control regime is overdue. Involving China in multilateral nuclear arms limitation and/or reduction talks is possibly a necessary condition, although admittedly not a sufficient condition for avoiding a "Thucydides Trap" between the United States and China. Indeed, the avoidance of a "triangular Thucydides Trap" in the form of a nuclear arms race in Asia among the United States, Russia, and China is necessary in order to prevent further nuclear proliferation in that region. Toward that end, China is prospectively a meaningful partner for the United States and Russia if they are to go forward with post-New START strategic nuclear arms reductions. China's military modernization and economic capacity create the potential for it to deploy during this decade or soon after a "more than minimum" deterrent sufficient to guarantee unacceptable retaliation against any attack, especially if China's less than intercontinental range forces are taken into account. China's missiles and aircraft of various ranges can inflict damage on Russian state territory and on US-related targets in Asia, including allies and bases. Nevertheless, an open-ended Chinese nuclear modernization in search of nuclear-strategic parity or superiority compared to the United States and Russia is improbable and, from their perspective, pointless. From a broader diplomatic and military perspective, it may be time for a three-cornered, and not a two-sided dialogue on strategic nuclear arms reductions or limitations.

Appendix: Notes on Methodology

Grateful acknowledgment is made to Dr. James J. Tritten, whose forty-fouryear career in the US Navy included serving as professor and department head for national security studies at the US Naval Postgraduate School. In that capacity, Dr. Tritten developed a nuclear exchange model based on a spreadsheet that I have since modified, adapted for use as an Excel spreadsheet, and revised the database to account for changes in US and Soviet (and then Russian) forces. A sample output is reproduced below with notional numbers.

The model assists the investigator by calculating formulas and by converting calculations into graphs. The investigator is required to specify the values for force structure, numbers of forces and weapons deployed, estimated performance characteristics of weapons, and other parameters. Dr. Tritten is not responsible for any of the analysis or arguments appearing in this study.

Appendix

Russian Forces	Launchers	Warheads @	Total Warheads
SS-11/3	0	1	0
SS-13/2	0	1	0
SS-18	30	10	300
RS-24 silo	0	4	0
SS-19/3	20	6	120
SS-27 silo	60	1	60
sub-total fixed land	110		480
RS-24 mobile	85	4	340
SS-27 mobile	27	1	27
sub-total mobile land	112		367
sub-total land-based	222		847
SS-N-6/3	0	1	0
SS-N-8/2	0	1	0
Delta IV – SS-N-23	64	4	256
Borei-Bulava	64	4	256
Delta III – SS-N-18	0	4	0
sub-total sea-based	128		512

Table One: Tritten Model Illustrative Spreadsheet

Russian Forces	Launchers	Warheads @	Total Warheads
Bear H6	63	1	63
Bear H 16	0	16	0
Tu-160 Blackjack	13	1	13
sub-total air-breathing	76		76
Total Russian forces	426		1435
US Forces			
Minuteman II	0	1	0
Minuteman III	0	1	0
Minuteman IIIA	400	1	400
Peacekeeper/MX	0	10	0
sub-total land-based	400		400
Trident C-4	0	4	0
Trident D-5/W-76	0	4	0
Trident D-5/W-88	240	4.5	1080
sub-total sea-based	240		1080
B-52G gravity	0	0	0
B-52G gravity	0	0	0
ALCM		0	0
B-52H ALCM	32	1	32
B-2	16	1	16
sub-total air-breathing	48		48
Total US forces	688		1528

Table Two

(Preceding Data in Table One multiplied through matrix of seventeen parameters in order to produce summary descriptors, as below).

Summary descriptors	Numbers
Total Russian deliverable warheads	438.75
Deliverable Russian reserve warheads	175.90
Total US deliverable warheads	583.69
Deliverable US reserve warheads	252.34

Notes

- 1 For assessments of this concept with pertinent references to the US-China relationship, see Graham Allison, "Just How Likely Is Another World War?" *The Atlantic*, July 2014, http://www.theatlantic.com/international/archive/2014/07/just-how-likely-is-another-world-war/375320/; and James R. Holmes, "Beware the 'Thucydides Trap' Trap: Why the U.S. and China aren't necessarily Athens and Sparta or Britain and Germany before WWI," *The Diplomat*, June 13, 2013, http://thediplomat.com/2013/06/beware-the-thucydides-trap-trap/html.
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- 3 Alexei Arbatov, "Engaging China in Nuclear Arms Control," Carnegie Moscow Center, October 9, 2014, http://carnegie.ru/publications/?fa=56886.
- 4 See, for example: Captain Bernard D. Cole, US Navy (Retired), "Island Chains and Naval Classics," *Proceedings of the U.S. Naval Institute* (November, 2014), pp. 68-73.
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- 6 Michael S. Chase, "Second Artillery in the Hu Jintao Era: Doctrine and Capabilities," in Assessing the People's Liberation Army in the Hu Jintao Era, eds. Roy Kamphausen, David Lai, and Travis Tanner (Carlisle, PA: Strategic Studies Institute, April 2014), pp. 301-353.
- 7 Ibid., p. 309.
- 8 See Hearing on Developments in China's Cyber and Nuclear Capabilities before the U.S.-China Economic and Security Review Commission, March 26, 2012, (Testimony of Dr. Mark B. Schneider, Senior Analyst, National Institute of Public Policy), http://www.uscc.gov/Hearings/hearing-developmentschina%E2%80%99s-cyber-and-nuclear-capabilities.
- 9 See Timothy L. Thomas, *Three Faces of the Cyber Dragon: Cyber Peace Activist, Spook, Attacker* (Fort Leavenworth, KS: Foreign Military Studies Office, 2012), pp. 39-66; Chase, "Second Artillery in the Hu Jintao Era," p. 331 notes specifically that Second Artillery has benefited from the expansion and improvement in C4ISR capabilities.
- 10 Paul Bracken, *The Second Nuclear Age: Strategy, Danger, and the New World Politics* (New York: Henry Holt/Times Books, 2012), p. 206.
- 11 See Jan Van Tol, Mark Gunzinger, Andrew Krepinevich, and Jim Thomas, AirSea Battle: A Point-of-Departure Operational Concept (Washington DC: Center for Strategic and Budgetary Assessments, 2010), http://www. csbaonline.org/publications/2010/05/airsea-battle-concept/.

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- 14 Michael R. Gordon, "U.S. Says Russia Tested Cruise Missile, Violating Treaty," *New York Times*, July 28, 2014.
- 15 Hearing on Developments in China's Cyber and Nuclear Capabilities, p. 2.
- 16 For example, see Hans M. Kristensen, Robert S. Norris, and Matthew G. McKinzie, Chinese Nuclear Forces and U.S. Nuclear War Planning (Washington, D.C.: Federation of American Scientists and Natural Resources Defense Council, November 2006), esp. pp. 35-46, which includes references to pertinent CIA and DOD assessments; Hearing on Developments in China's Cyber and Nuclear Capabilities. For American and Russian forces, see Jon B. Wolfsthal, Jeffrey Lewis, and Marc Quint, The Trillion Dollar Triad: U.S. Strategic Modernization Over the Next Thirty Years (Monterey, CA: James Martin Center for Nonproliferation Studies, January 2014); Mark B. Schneider, "The State of Russia's Strategic Forces;" Defense Dossier 12 (October 2014):13-18; Hans M. Kristensen and Robert S. Norris, US Nuclear Forces 2014, Bulletin of the Atomic Scientists, no. 1, (2014): 85-93; Hans M. Kristensen, "Trimming Nuclear Excess: Options for Further Reductions of U.S. and Russian Nuclear Forces," Special Report No. 5, (Washington, D.C.: Federation of American Scientists, December 2012), http://fas. org/_docs/2012TrimmingNuclearExcess.pdf; Arms Control Association, "U.S. Strategic Nuclear Forces Under New START," July 2013, http://www. armscontrol.org/factsheets/USStratNukeForceNewSTART; Arms Control Association, "Russian Strategic Nuclear Forces Under New START," http://www.armscontrol.org/factsheets/RussiaStratNukeForceNewSTART; Joseph Cirincione, "Strategic Turn: New U.S. and Russian Views on Nuclear Weapons," New America Foundation, June 29, 2011; Pavel Podvig, "New START Treaty in numbers," Russian strategic nuclear forces (blog), April 9, 2010, http://russianforces.org/blog/2010/03/new_start_treaty_in_numbers. shtml.
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