Chinese Military Modernization

Implications for Strategic Nuclear Arms Control

China's political and military objectives in Asia and worldwide differ from those of the United States and Russia, reflecting a perception of that nation's own interests and of its anticipated role in the emerging world order.[1] Its growing portfolio of smart capabilities and modernized platforms includes stealth aircraft, antisatellite warfare systems, quiet submarines, "brilliant" torpedo mines, improved cruise missiles, and the potential for disrupting financial markets. Among other indicators, China's already deployed and future Type 094 *Jin*-class nuclear ballistic missile submarines (SSBN), once they are equipped as planned with JL-2 submarine launched ballistic missiles, will for the first time enable Chinese SSBNs to target parts of the United States from locations near the Chinese coast. Along with this, China's fleet of nuclear-powered attack submarines supports an ambitious anti-access/area denial (A2/AD) strategy to deter US military intervention to support allied interests in Asia against Chinese wishes.[2] China's diplomacy creates additional space for maneuver between Russian and American perceptions. While China may lack the commitment to arms control transparency, the nation's current and future military modernization entitles Beijing to participate in future Russian-American strategic nuclear arms control talks.

Entering China into the US-Russian nuclear-deterrence equation creates considerable analytical challenges, for a number of reasons. To understand these challenges one must consider the impact of China's military modernization, which creates two follow-on challenges: escalation control and nuclear signaling.

Military Modernization

China's military modernization is going to change the distribution of power in Asia, including the distribution of nuclear and missile forces. This modernization draws not only on 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, stratagems, 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."[3]

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 their forces are far from nuclear-strategic parity with the United States or Russia. Conversely, China may not aspire to this model of nuclear-strategic parity, such as between major nuclear powers, as the key to war avoidance by deterrence or other means. China may prefer to see nuclear weapons as one option among a spectrum of choices available in deterring or fighting wars under exigent conditions and as a means of supporting 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.[4]

Second, China is expanding its portfolio of military preparedness not only in platforms and weapons but also in the realms of command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) and information technology. Having observed the US success in Operation Desert Storm against Iraq in 1991, Chinese military strategists concluded that the informatization of warfare under all conditions would be a predicate to future deterrence and defense operations.[5] 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.[6] The emphasis on agility instead of brute force reinforces traditional Chinese military thinking. Since Sun Tzu, the acme of skill has been winning without fighting, but if war is unavoidable, delivering the first and decisive blows is essential. This thinking also stipulates that one should attack the enemy's strategy and his alliances, making maximum use of deception and basing such attacks on superior intelligence and estimation. The combination of improved platforms and command-control and information warfare should provide options for the selective use of precision fire strikes and cyberattacks against pri-

ority targets while avoiding mass killing and fruitless attacks on enemy strongholds.[7]

Escalation Control

Another characteristic of the Chinese military modernization that is important for nuclear deterrence and arms control in Asia is the problem of escalation control. Two examples or aspects of this problem might be cited here. First, improving Chinese capabilities for nuclear deterrence and for conventional warfighting increases Chinese leaders' confidence 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 US doctrine and supporting force structure for "AirSea Battle" countermeasures against Chinese A2/AD strategy.[8]

Another problem of escalation control is the question of nuclear crisis management between a more muscular China and its Asian neighbors or others. During the Cold War era, Asia was a comparative nuclear weapons backwater, since the attention of US and allied North Atlantic Treaty Organization policy makers and military strategists was focused on the US-Soviet arms race. However, 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, and post–Cold War Asia is marked by five nuclear weapons states: Russia, China, India, Pakistan, and North Korea. The possibility of a nuclear weapon use, growing out of a conventional war between India and Pakistan or China and India, is nontrivial, and North Korea poses a continuing uncertainty of two sorts. This latter nation might start a conventional war on the Korean peninsula, or the Kim Jung-un regime might implode, leaving uncertain the command and control over the nation's armed forces, including nuclear weapons and infrastructure.[9]

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 would be even more abundant with respect to escalation control in the

aftermath of a regional Asian war. There is also 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 US 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, as offstage reminders that the two states could stumble into a mutually unintended process of escalation.

An important correction or cautionary note must be introduced at this point. Policy makers and strategists have sometimes talked as if nuclear weapons always serve to dampen escalation instead of exacerbating it. This might be a valid theoretical perspective under normal peacetime conditions. However, once a crisis begins—and especially after shooting has started—the other face of nuclear danger will appear. Thereafter, reassurance based on the assumption that nuclear first use is unthinkable may give way to such an attack becoming very thinkable. As Michael S. Chase has warned, miscalculation in the middle of a crisis is a "particularly troubling possibility," heightened by uncertainty about messages the sides are sending to one another and/or leaders' overconfidence in their ability to control escalation.[10]

The "Thucydides Trap" and Nuclear Signaling

Chinese decisions about nuclear force modernization will not take place in a political vacuum. One important issue for US-Chinese strategic planning is whether China and the United States will allow their political relations to fall into the "Thucydides trap," which refers to the relationship between a currently leading or hegemonic military power and a rising challenger—as in the competition between a dominant Athens and a rising Sparta preceding the Peloponnesian War.[11] The Thucydides trap occurs when a leading and rising power sees their competition as a zero-sum game in which any gain for one side automatically results in a commensurate loss in power or prestige for the other side. It is neither necessary nor obvious that US-Chinese diplomatic-strategic behavior be driven to this end. However, China's challenges in Asia against US or allied Pacific interests might provoke a regional dispute with the potential to escalate into a more dangerous US-Chinese confrontation, including resort to nuclear deterrence or threats of nuclear first use.

Even if both Washington and Beijing avoid the Thucydides trap, China has the option of *using* nuclear weapons for diplomatic or strategic objectives short of war or explicit nuclear threats. We miss important possibilities for the political exploitation of nuclear weapons if we confine our analysis of China's options to threats or acts of nuclear first use or first strike. The following list includes some of the ways China might signal nuclear weapons use to support its foreign policy in possible confrontations with the United States or US Asian allies:

- Nuclear tests during a political crisis or confrontation
- Military maneuvers with nuclear-capable missile submarines or naval surface forces
- Generated alert for air defense forces to reinforce declaration of an expanded air defense identification zone closed to all foreign traffic
- Open acknowledgment of hitherto unannounced—and undetected by foreign intelligence—long- and intermediate-range missiles based underground in tunnels on moveable or mobile launchers
- Adoption of a launch-on-warning policy in case of apparent enemy preparations for nuclear first use
- Cyberattacks against military and critical infrastructure targets in the United States or against a US ally, including important military and command-control networks in Asia, preceded or accompanied by movement of forces to improve first-strike survivability against conventional or nuclear attack
- Relocation of People's Liberation Army Second Artillery command centers to more protected sites
- Preparation for antisatellite launches against US or other satellites in low earth orbit
- Mobilization of reserves for military units that are nuclear capable
- Shake-up of the chain of command for political or military control of nuclear forces or force components

None of the preceding activities would necessarily be accompanied by explicit threats of nuclear first use or retaliation. Chinese political and military leaders would expect US intelligence to notice the actions and hope for US forbearance. China's expectation might include either a

willingness to settle a disagreement based on the status quo or on some newly acceptable terms. Creative analysts or experienced military and intelligence professionals could expand the preceding list; it is neither exhaustive nor definitive of China's options for nuclear-related signaling.

Contrary to some expert opinion, the relationship between China's ability to exploit its nuclear arsenal for political or military-deterrent purposes and China's apparent expertise in cyberwar deserves closer scrutiny. It is true nuclear war and cyberwar inhabit separate universes in terms of organization, mission, and technology. Moreover, the consequences of a nuclear war would certainly be more destructive than any cyberwar fought between the same states or coalitions. In addition, deterrence seems easier to apply as a concept to nuclear war, compared to cyberwar. Among other reasons, the problem of attribution in the case of a nuclear attack is simple compared to the case of a cyberattack.[12]

Notwithstanding the preceding caveats, in the information age it is likely that cyber and nuclear worlds will have overlapping concerns and some mutually supporting technologies. For the foreseeable future, nuclear-strategic command and control, communications, reconnaissance and surveillance, and warning systems—unlike those of the Cold War—will be dependent upon the fault tolerance and fidelity of information networks, hardware and software, and security firewalls and encryption. Therefore, these systems and their supporting infrastructures are candidate targets in any enemy version of the US Nuclear Response Plan (formerly Single Integrated Operational Plan). In thinking about this nuclear and cyber nexus, it becomes useful to distinguish between a state's planning for a preventive versus a preemptive attack.

During the Cold War, most of the nuclear-deterrence literature was focused on the problem of nuclear preemption, in which a first-strike nuclear attack would be taken under the assumption that the opponent had already launched its nuclear forces or had made a decision to do so. On the other hand, preventive nuclear war was defined as a premeditated decision by one state to weaken a probable future enemy before that second state could pose an unacceptable threat of attack. Most Cold War political leaders and their military advisors rightly regarded preventive nuclear war as an ethically unacceptable and strategically dysfunctional option.[13]

In a world in which the day-to-day functioning of military forces and civil society is now dependent upon the Internet and connectiv-

ity, the option of a preventive war with two phases now presents itself to nuclear-armed states. In the first phase, selective cyberattacks might disable key parts of the opponent's nuclear response program—especially nuclear-related C4ISR. In the second phase, a nuclear threat of first use or first strike might follow against an enemy partially crippled in its ability to analyze its response options or to order those responses into prompt effect. If this scenario seems improbable in the context of large states like the United States, Russia, and China because of their force and command-control diversity and protection, consider how it might work in the context of confrontations between smaller nuclear-armed states, including hypothetical future India-Pakistan or Israel-Iran showdowns.[14] Even in the cases of US conflict with China or Russia (or between China and Russia), nuclear crisis management would certainly include preparation for possible cyberattacks preceding or accompanying nuclear first use or first strike.

Conclusion

China is a possible but not inevitable partner for the United States and Russia if the latter nations are to go forward with post–New START strategic nuclear arms reductions. China's military modernization and economic capacity create the potential for that nation to deploy within this decade or soon thereafter 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. Chinese missiles and aircraft of various ranges can inflict damage on Russian territory and on US-related targets in Asia, including US 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 the Chinese perspective, pointless. From a broader diplomatic and military perspective, it appears the time has arrived for a triangular relationship instead of a two-sided dialogue on strategic nuclear arms reductions or limitations. SSQ

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Notes

1. See Bernard D. Cole, "Island Chains and Naval Classics," *Proceedings Magazine* 140, no. 11 (November 2014): 68–73.

2. Jeremy Page, "Deep Threat: China's Submarines Add Nuclear-Strike Capability, Altering Strategic Balance," *Wall Street Journal*, 24 October 2014, http://online.wsj.com/articles/chinas-submarine-fleet-adds-nuclear-strike-capability-altering-strategic-balance-undersea-1414164738.

3. David Lai, "The Agony of Learning: The PLA's Transformation in Military Affairs," in *Learning by Doing: The PLA Trains at Home and Abroad*, ed. Roy Kamphausen, David Lai, and Travis Tanner (Carlisle, PA: Strategic Studies Institute, US Army War College, November 2012), 369.

4. See United States-China Economic and Security Review Commission, *Dr. Mark B. Schneider, Testimony before the U.S.-China Economic and Security Review Commission, Hearing on Developments in China's Cyber and Nuclear Capabilities*, 26 March 2012, http://www.uscc.gov/sites/default/files/3.26.12schneider.pdf.

5. See Timothy L. Thomas, *Three Faces of the Cyber Dragon: Cyber Peace Activist, Spook, Attacker* (Fort Leavenworth, KS: Foreign Military Studies Office, 2012). Of special interest is chapter 2, "China and Information Deterrence," 39–66. See also 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*, ed. Roy Kamphausen, David Lai, and Travis Tanner (Carlisle, PA: Strategic Studies Institute, US Army War College, April 2014), 331. Chase notes specifically that Second Artillery has benefited from the expansion and improvement in C4ISR capabilities.

6. Paul J. Bracken, *The Second Nuclear Age: Strategy, Danger, and the New World Politics* (New York: Henry Holt and Co./Times Books, 2012), 206.

7. For a discussion of this, see Lai, "The Agony of Learning," 364–65.

8. Expert assessment of this concept appears in 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/.

9. Kang Seung-woo, "NK Could Play Nuclear Option," *Korea Times,* 11 August 2014, http://www.koreatimes.co.kr/www/news/nation/2015/01/116_162687.html.

10. Chase, "Second Artillery in the Hu Jintao Era," 340.

11. See James R. Holmes, "Beware the 'Thucydides Trap' Trap," *Diplomat*, 13 June 2013, http://thediplomat.com/2013/06/beware-the-thucydides-trap-trap/?.

12. Martin C. Libicki, *Conquest in Cyberspace: National Security and Information Warfare* (New York: Cambridge University Press, 2007), 39–43. See also Colin S. Gray, *Making Strategic Sense of Cyber Power: Why the Sky Is Not Falling* (Carlisle, PA: Strategic Studies Institute, Army War College Press, April 2013).

13. Some high ranking political and military officials in the Eisenhower administration advanced arguments for preventive war, but Pres. Dwight Eisenhower was inherently skeptical of that option, while being careful never to remove any options from the table. See Evan Thomas, *Ike's Bluff: President Eisenhower's Secret Battle to Save the World* (New York: Little, Brown, 2012), 155–65 and passim.

14. On the issue of nuclear deterrence as between Israel and Iran, see Steven R. David, *Armed and Dangerous: Why a Rational, Nuclear Iran Is an Unacceptable Risk to Israel*, Mideast Security and Policy Studies No. 104 (Ramat Gan, Israel: Began-Sadat Center for Strategic Studies, Bar-Ilan University, November 2013), http://www.besacenter.org.

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