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## **China's Nuclear Idiosyncrasies and Their Challenges**

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**Jeffrey Lewis**

*November- December 2013*



**Security Studies Center**

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## *Proliferation Papers*

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# Introduction

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The Chinese nuclear arsenal is a puzzle for many Americans. Two primary features create this puzzle: China's nuclear arsenal is small and vulnerable relative to the US nuclear arsenal. China continued to rely on a nuclear deterrent based on land-based ballistic missiles kept in a state of non-alert, with the warheads separate, and constrained by a restrictive doctrine that limits the strategic forces to attacking after absorbing a nuclear strike.

To a Western observer this posture is unnecessarily vulnerable. Particularly in the United States, nuclear strategists have emphasized the importance of survivability and diversity to hedge against unexpected threats.

It is also possible, of course, that Chinese leaders simply think differently about nuclear weapons than their American counterparts. This discrepancy in thought stems from different historical experiences, ideological outlooks and bureaucratic structures for making decisions about nuclear weapons.

Such differences might matter a great deal. Chinese and American policymakers each believe their country's nuclear forces deter coercion by the other. Chinese and American policymakers plan to use their deployments and alert levels to signal to the other party in a crisis. Yet misperceptions may result in misinterpreted signals. Americans, for example, tend to discount China's no first use pledge, looking instead for signs that China is preparing to employ nuclear weapons in the early stages of a conflict. Chinese leaders tend to discount the role that reassuring allies plays in US policy. As a result, each side may signal resolve in ways that would escalate a crisis.

This monograph considers, in turn, the evolution of China's nuclear policy, forces and posture, differences in US and Chinese perceptions, how those differences undermine dialogue, and finally it outlines a proposal for a Joint Statement on Strategic Stability that might help the US and China better manage strategic stability and regional security. It is based in large part on historical materials about the development of China's nuclear arsenal, Chinese writings, and interactions with Chinese colleagues, both individually and in Track 1.5 conversations.



# China's Nuclear Policies, Forces and Posture Today

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China's nuclear arsenal is based principally on ballistic missiles operated by the Second Artillery Corps (sometimes written Second Artillery Force). According to the Department of Defense, "China's nuclear arsenal currently consists of about 50-75 silo-based, liquid-fueled and road-mobile, solid-fueled ICBMs. This force is complemented by liquid-fueled, intermediate-range ballistic missiles and road-mobile, solid-fueled MRBMs for regional deterrence missions."<sup>1</sup>

China's arsenal of ICBMs includes liquid-fueled DF-4 and DF-5 ICBMs deployed during the 1970s and 1980s, as well as road-mobile DF-31 and DF-31A solid-fueled ballistic missiles deployed in recent years. Since no deployed ballistic missile is presumed to be equipped with Multiple, Independently Targeted Reentry Vehicles (MIRV), this would suggest an operationally deployed force of approximately 100-200 warheads. It is unclear how many of the DF-21 ballistic missiles are armed with conventional rather than nuclear warheads, although unclassified assessments suggest the first 50 DF-21 missiles were armed with nuclear warheads.<sup>2</sup> China also maintains a large number of conventionally-armed short-range ballistic missiles and cruise missiles.<sup>3</sup>

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<sup>1</sup> *Military and Security Developments Involving the People's Republic of China, 2012 Annual Report to Congress*, Washington, Department of Defense, May 2012, available at: [http://www.defense.gov/pubs/pdfs/2012\\_cmpr\\_final.pdf](http://www.defense.gov/pubs/pdfs/2012_cmpr_final.pdf).

<sup>2</sup> The 2010 *Military and Security Developments Involving the People's Republic of China* estimates that there are 85-95 DF-21 missiles. More recent versions of this report do not provide estimates of the numbers of specific missile types. *Military and Security Developments Involving the People's Republic of China, 2010 Annual Report to Congress*, Washington, Department of Defense, 2010, p. 66, available at: [http://www.defense.gov/pubs/pdfs/2010\\_cmpr\\_final.pdf](http://www.defense.gov/pubs/pdfs/2010_cmpr_final.pdf)

<sup>3</sup> The 2013 *Military and Security Developments Involving the People's Republic of China* estimates that there are no more than "1,100 SRBMs deployed against Taiwan," and that "China is fielding a limited but growing number of conventionally armed, medium-range ballistic missiles." *Military and Security Developments Involving the People's Republic of China, 2013 Annual Report to Congress*, Washington, Department of Defense, 2013, p. 5, available at: [http://www.defense.gov/pubs/2013\\_china\\_report\\_final.pdf](http://www.defense.gov/pubs/2013_china_report_final.pdf). As noted in the previous footnote, the most recent versions of this document do not give estimates of the number of specific missile types fielded, but the 2011 report does estimate that there are 200-500 ground-launched cruise missiles in China's arsenal. *Military and Security Developments Involving the People's Republic of China, 2011 Annual Report to*

The United States intelligence community assesses the number of Chinese nuclear weapons will increase, and that China is modernizing its missile forces. China is currently producing and fielding solid-fueled missiles (DF-21, DF-31 and DF-31A) to replace the first generation of missiles deployed between 1966 and 1996 (DF-3, DF-4 and DF-5). China appears to be developing additional missiles, including another medium range ballistic missile (identified as the CSS-X-11) and possibly a new ICBM (sometimes called the DF-41).<sup>4</sup> Recent images from Chinese social media show three previously unidentified transporter-erector launchers which might carry such a new road-mobile ICBM.<sup>5</sup>

China stores its nuclear warheads separately from its arsenal of ballistic missiles. For example, one former US defense official indicated that warhead storage sites are “tens of kilometers” from launchers.<sup>6</sup> The units responsible for handling nuclear weapons appear distinct from missile launch units. Because Chinese launch brigades appear to operate a single type of ballistic missile, conventional and nuclear units are largely separated. However, it is difficult to be certain that Chinese does not collocate conventional and nuclear-armed DF-21 ballistic missiles. Moreover, some base headquarters may be responsible for both nuclear and conventional missiles.

China is currently developing the new *Jin*-class ballistic missile submarine, as well as new submarine-launched ballistic missile (the JL-2).<sup>7</sup> China has two or three *Jin*-class ballistic missile submarines, each with 16 launch tubes. Problems with the JL-2 ballistic missile have apparently slowed development of this system, although its deployment is now expected at any time.

China does not yet appear to have invested in command-and-control or other communications capabilities that would support an operational sea-based deterrent that would constitute a second strike capability. Moreover, the PLA Navy has no experience in conducting operational patrols with nuclear warheads mated to missiles. It could surely acquire such capabilities, but at the present time it is not clear whether China will maintain a continuous at sea deterrent as the United States,

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Congress, Washington, Department of Defense, 2011, available at: [http://www.defense.gov/pubs/pdfs/2011\\_cmpr\\_final.pdf](http://www.defense.gov/pubs/pdfs/2011_cmpr_final.pdf).

<sup>4</sup> Leaked cables suggests that China is developing a new medium-range ballistic missile, the CSS-X-11. The 2010 edition of *Chinese Military Power* also stated that China “may also be developing a new road-mobile ICBM...” *Military and Security Developments Involving the People's Republic of China, 2010 Annual Report to Congress, op. cit.*

<sup>5</sup> For a discussion of the images, please see Jeffrey Lewis, “Show and TEL”, *Arms Control Wonk*, 26 March 2013, available at: <http://lewis.armscontrolwonk.com/archive/6385/show-and-tel>

<sup>6</sup> Private communication. See also: Mark A. Stokes, *China's Nuclear Warhead Storage and Handling System*, Arlington, Project 2049 Institute, 12 March 2010, available at: [http://project2049.net/documents/chinas\\_nuclear\\_warhead\\_storage\\_and\\_handling\\_system.pdf](http://project2049.net/documents/chinas_nuclear_warhead_storage_and_handling_system.pdf)

<sup>7</sup> China constructed a single *Xia*-class ballistic missile submarine in the 1980s, but this submarine does not appear to have ever become operational.

Britain and France do, or whether China will patrol episodically, flushing nuclear-armed submarines to sea only in a crisis. For now, Chinese officials continue to refer to the Second Artillery as the main or primary deterrent force, despite the impending entry of the Chinese Navy into the business of deterrent operations.

China's relatively small number of deployed forces – a few hundred warheads – is consistent with its limited production of fissile material.<sup>8</sup> China has military facilities for separating plutonium and enriching uranium. Based on atmospheric test data through 1980, China would appear to use nuclear weapons with plutonium primaries, while highly enriched uranium production appears to be for thermonuclear secondaries, as well as naval propulsion.<sup>9</sup>

China's initial highly enriched uranium and plutonium was produced at a pair of facilities near Lanzhou and Jiuquan. These facilities were replicated in third line facilities near Jinkouhe (also referred to as Heping) and Guangyuan. China's first line facilities were converted to civilian use in the 1980s, then shut down for a period of time. Today, China is building civilian enrichment and reprocessing facilities at these sites. China appears to have decommissioned its facilities at Guangyuan; the status of highly enriched uranium production at Jinkouhe/Heping is less clear.<sup>10</sup>

Overall, the size of China's arsenal is probably constrained by past plutonium production. Open source estimates place past Chinese plutonium production between 1 and 5 tons.<sup>11</sup> A classified 1999 Department of Energy estimate, leaked to the *Washington Times*, gave China's weapons plutonium stockpile as 1.7-2.8 tons.<sup>12</sup> The lower estimate

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<sup>8</sup> For declassified US assessment of China's stockpile, see: *China's Nuclear Weapons Testing: Facing Prospects for a Comprehensive Test Ban*, Central Intelligence Agency, Office of Scientific and Weapons Research, 30 September 1993, p. 1, available at: [http://216.12.139.91/docs/DOC\\_0000996367/DOC\\_0000996367.pdf](http://216.12.139.91/docs/DOC_0000996367/DOC_0000996367.pdf); and "China Seeking Foreign Assistance To Address Concerns About Nuclear Stockpile Under CTBT", *Proliferation Digest*, 29 March 1996, p. 38.

<sup>9</sup> See Lars-Erik De Geer, "Chinese Atmospheric Nuclear Explosions from a Swedish Horizon: A Summary of Swedish Observations of Chinese Nuclear Test Explosions in the Atmosphere, 1964-1980", paper presented at the Fourth SCOPE-RADTEST International Workshop, Beijing, October 1996.

<sup>10</sup> For a basic review of China's fissile material production facilities, see the website maintained by the Monterey Institute of International Studies for the Nuclear Threat Initiative. "China Nuclear Facilities", The Nuclear Threat Initiative, 2013, available at: <http://www.nti.org/country-profiles/china/facilities>

<sup>11</sup> David Wright and Lisbeth Gronlund, "Estimating China's Production of Plutonium for Weapons", *Science and Global Security*, Vol. 11, No. 1, 2003, pp. 61-80, available at: [http://www.princeton.edu/sqs/publications/sqs/pdf/11\\_1Wright.pdf](http://www.princeton.edu/sqs/publications/sqs/pdf/11_1Wright.pdf). Hui Zhang, "China's HEU and Plutonium Production and Stocks", *Science and Global Security*, Vol. 19, No. 1, 2011, pp. 68-89, available at: <http://belfercenter.ksg.harvard.edu/files/huizhangSGS2011.pdf>

<sup>12</sup> William M. Arkin and Robert S. Norris, "World Plutonium Inventories-1999", *The Bulletin of the Atomic Scientists*, September-October 1999, available at: [http://www.ccnr.org/plute\\_inventory\\_99.html](http://www.ccnr.org/plute_inventory_99.html)

probably reflects reduced estimate for the second reactor, which may have been operated at a much lower level than previously thought. If China produced approximately 2 tons of plutonium, and uses 4 kilograms of plutonium per warhead, the maximum total stockpile size would be approximately 500 warheads. If China's fissile material production were less than the available estimates predict, or if China made less efficient use of fissile material than the United States, the total stockpile size might be smaller. China's leaders may be reluctant to embrace a fissile material cut-off treaty, given their current stockpile of plutonium and their understanding of plutonium aging, without more confidence in the long-term strategic relationship with the United States.

# Differing Conceptions About the Role of Nuclear Weapons

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**W**hy did Chinese leaders choose to build such an unusual deterrent? The simplest explanation is that Chinese policymakers tended to discount the American view that the “balance of terror” was “delicate”.<sup>13</sup> China has long relied on a nuclear force that is small, vulnerable and saddled with a challenging policy of “no first use.” Although occasionally experts surmise that China must have large numbers of hidden nuclear weapons, the simplest explanation is that Chinese policy makers have tended to make decisions about China’s strategic forces that suggest a widespread belief that deterrence is achieved early and with a small number of forces.

It should not be surprising that Chinese leaders would think differently about nuclear weapons given the differences in historical experience, ideology and bureaucratic structures.

First, Chinese leaders successfully endured what they viewed as nuclear coercion during the Cold War, particularly in Korea. Recent scholarship indicates that Chinese policy during the Korean War did not change in response to US nuclear threats. The first generation of Chinese Communist leaders formed accurate assessments about the physical limitations of nuclear weapons and the political constraints on the US use of nuclear weapons – although they may have underestimated the willingness of the Eisenhower Administration to use nuclear weapons.<sup>14</sup> They concluded that nuclear weapons are tools of political coercion that can successfully be met with resolve and, eventually, possession of similar capabilities. Chinese leaders appear to have become more alarmed during the depths of the Sino-Soviet crisis in 1969, but Mao’s China responded by improving relations with the United States more than by expanding its nuclear weapons program. In fact, the so-called Four Marshalls who successfully advocated for better relations with what Mao called “the far enemy” (i.e. the United States) included Marshall Nie Rongzhen, who ran the country’s strategic weapons programs.

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<sup>13</sup> Albert Wohlstetter, “The Delicate Balance of Terror”, *Foreign Affairs*, Vol. 37, No. 2, January 1959, pp. 211-234.

<sup>14</sup> Mark A. Ryan, *Chinese Attitudes toward Nuclear Weapons: China and the United States during the Korean War*, New York, ME Sharpe, 1989, p. 179.

Second, Maoist ideology held that “men and politics”, not weapons, were decisive in the outcome of a struggle. The reference to “paper tigers” – first used in reference to reactionaries in 1946 – is an allusion to “an older Maoist revolutionary maxim which holds that men and politics, rather than weapons and economic power, are the determining factors in war.”<sup>15</sup> In context, referring to nuclear weapons as paper tigers merely indicates that the balance of nuclear weapons is not likely to be decisive in conflict – a statement that the technical details matter very little. Calling nuclear weapons paper tigers is simply the “healthy disrespect” that MacGeorge Bundy, reflecting on the Cuban Missile Crisis, predicted any world leader would have for plans to fight a nuclear war. It is perhaps no more colorful than similar remarks by US and Soviet leaders.<sup>16</sup>

Third, the bureaucratic realities of China's nuclear weapons development seem to have reinforced the tendency toward minimalism suggested by the ideological description of nuclear weapons as paper tigers. Although most histories of China's nuclear weapons program begin with a decision made by Mao in 1955, Chinese leaders did not have to fully grapple with the costs associated with a nuclear weapons program until 1961. The early leadership consensus behind pursuing nuclear weapons in the mid-1950s was premised on substantial amounts of Soviet assistance. That consensus eventually cracked under the budgetary and technical constraints imposed by the suspension of Soviet technical assistance and the chaos of the Great Leap Forward. Military leaders and those responsible for defense production wanted to cut strategic programs – nuclear weapons and ballistic missiles – to make available money for ships, tanks, and aircraft that would be needed to defend China from the United States or the Soviet Union. The Central Committee resolved the controversy in the summer of 1961 by prioritizing strategic programs for modernization over the development of conventional forces, in effect elevating the defense science and technology community. Marshal Nie Rongzhen, the head of China's defense science and technology complex after 1958, won the bureaucratic battle, arguing that strategic programs would serve as an organizing endeavor for national science and technology, a rationale that linked the development of “sophisticated weapons” to the broader theme of China's national economic development

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<sup>15</sup> Ralph L. Powell, “Great Powers and Atomic Bombs Are ‘Paper Tigers’”, *China Quarterly*, No. 23, July-September 1965, pp. 55-63.

<sup>16</sup> Matthew Evangelista cites a wonderful pair of remarks from Soviet Premier Nikita Khrushchev and President Dwight D. Eisenhower that suggest both saw nuclear weapons in terms of minimum deterrence. “Missiles are not cucumbers,” Khrushchev said, “one cannot eat them, and one does not require more than a certain number in order to ward off an attack.” Eisenhower was more precise about that “certain number.” “We should develop a few of these missiles as a threat, but not 1,000 or more,” Eisenhower said. He added that if the Soviet Union and the United States could launch more, then “he personally would want to take off for the Argentine.” Matthew Evangelista, *Unarmed Forces: The Transnational Movement to End the Cold War*, Ithaca, Cornell University Press, 1999, pp. 118-119.

and emphasized the possession of advanced capabilities, rather than their battlefield uses.<sup>17</sup>

This bureaucratic history may explain why China chose to invest very little in strategic bombers: advocates for the aircraft industry had aligned themselves with opponents of the strategic weapons programs. Although China's aviation industry was in its infancy in 1961, it was considerably more advanced than China's missile programs at the time. Nie's control of the missile program, and their status as "sophisticated" weapons, appears to have mattered more than China's defense industrial base. It may also explain the small number of ballistic missiles that China acquired: Since the advocates were largely scientists and engineers responsible for designing new missiles and warheads, the natural bureaucratic emphasis was on continuing research and development, rather than procurement.

All of these factors led advocates for the nuclear and ballistic missile programs to argue for a relatively small nuclear force that represented China's possession of the most advanced strategic capabilities. Although China's historical, ideological and bureaucratic structures would change dramatically over the years, China's current force structure remains largely a legacy of these considerations.

The emphasis on possession, rather than use, of nuclear weapons is evident in how the Chinese describe their arsenal, both in terms of vocabulary and the content of declaratory policy. Chinese leaders tend to eschew using the word "deterrence" to describe the purpose of China's nuclear forces. The Chinese word for "deter" (*weishe*) carries a much stronger sense of *terror* or blackmail than the oddly clinical "deterrence" and "compellence." "Deterrence" is not often used in Chinese publications, although it sometimes appears in English-language translations and Western-oriented scholarship. The National Defense White Papers, for instance, tend to use "counterattack" rather than "deterrence" – with the exception of the 2004 paper, which used both<sup>18</sup>. Chinese officials and experts often do not distinguish between coercive and defense threats with nuclear weapons.

China's rejection of the credibility of nuclear threats – what Thomas Schelling eloquently called "the threat of damage, or of more damage yet to come, that can make someone yield or comply," helps explain why many Chinese avoid using the word "deterrence" to describe China's arsenal.<sup>19</sup> Chinese leaders rejected the credibility of such threats to make one either yield or comply; either "counterattack" or "reprisal" seem a better choice for

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<sup>17</sup> Nie Rongzhen, *Inside the Red Star: The Memoirs of Marshal Nie Rongzhen*, Beijing, New World Press, 1988, p. 702.

<sup>18</sup> "China's National Defense in 2004", Information Office of the State Council of the People's Republic of China, Beijing, December 2004, available at: <http://www.china.org.cn/e-white/20041227/>

<sup>19</sup> Thomas C. Schelling, *Arms and Influence*, New Haven, Yale University Press, 1967, p. 3.

the purpose they had in mind. One can see echoes of this difference in contemporary debates. The National Academies' *English–Chinese, Chinese–English Nuclear Security Glossary* was delayed for many months by a dispute over whether to include the term “limited nuclear deterrence.”<sup>20</sup>

It is in this context – the ability to counter coercion – that one should understand China's no first use pledge. Where Western writers have tended to see such a pledge as a self-imposed constraint placed upon the state making the pledge, Chinese policy makers seem to view the pledge as a statement about the nature of nuclear weapons – an outright rejection of the value of nuclear threats – and, as a result, an observation on the reason why China's own small, vulnerable force still enjoys a kind of parity with the United States.

It was not until the 1980s that Chinese military leaders began contemplating the need to develop plausible operational concepts for China's nuclear forces under the strictures of no first use. Over the course of the 1980s, the Second Artillery developed ideological and doctrinal materials that attempted to create plausible nuclear strategy for China that was consistent with the policy of no first use imposed by Mao. Chinese military officials appear to be particularly vexed with deterring conventional attacks on strategic targets, such as missile silos. In the West, we often interpret these discussions as a “debate” about “no first use.” These discussions are probably better understood as debates about how to create credible military options given the imposed policy of “no first use.” The growing professionalism of the Chinese military and its importance in policy debates may create more latitude regarding how it plans for conflict scenarios, but these efforts do not appear to amount to a top-down political judgment to adopt a different ideological construct for China's nuclear forces, which remains wedded to retaliatory missions.

This emphasis also explains the Chinese tendency toward opacity. China retains a small arsenal that is designed largely to deter coercion. Chinese leaders have tended to treat the fact of possession as the most important. In general, Chinese officials are willing to disclose the existence of systems in order to demonstrate that China has the capacity to retaliate in the event of an attack, but regard further details such as the number, location, basing mode or alert status as threatening to the survivability of a limited nuclear force. Chinese policymakers have not expressed much concern about stability, and the need for transparency to manage it, instead focusing on the core goal of deterring coercion.

It is difficult to anticipate the future of Chinese strategic forces, particularly as new military capabilities tend to appear before plausible operational concepts. The current course appears to be a modernization within the broad parameters of China's historical approach to nuclear

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<sup>20</sup> Committee on US-Chinese Glossary of Nuclear Security Terms, *English–Chinese, Chinese–English Nuclear Security Glossary*, Washington and Beijing, National Academies Press and Atomic Energy Press, 2008, available at: [http://sites.nationalacademies.org/PGA/cisac/PGA\\_050966](http://sites.nationalacademies.org/PGA/cisac/PGA_050966)

weapons issues. In this case, China would deploy a slightly larger nuclear force consisting of more modern delivery vehicles such as road-mobile ICBMs and submarine-launched ballistic missiles. These forces may be kept off alert, until a crisis when Chinese leaders decide they need to signal resolve. China would continue investing in other systems such as conventionally-armed ballistic missiles and advanced military technologies for missile defense and anti-satellite missions such as hit-to-kill and laser technologies. In such a framework, China's nuclear policy, forces and posture would exist in parallel to its conventional ballistic and cruise missiles and other advanced military capabilities. Another plausible, though I suspect less likely outcome, is that the Chinese leadership will conclude that the professionalism of the PLA and the technological options provided by solid-fueled missiles will permit some or all of the strategic forces to be operated on day-to-day alert. In this case, China's nuclear policies, forces and posture would increasingly resemble Chinese thinking about conventional ballistic and cruise missiles and other advanced military systems. This would represent a discontinuity with the historical evolution of China's nuclear forces.

### No First Use

China has an unequivocal "no first use" policy that states China will "not to be the first to use nuclear weapons at any time or under any circumstances." No issue confounds the Sino-American dialogue about nuclear weapons more than mutual misunderstanding surrounding this pledge.

Americans are highly skeptical of such pledges, creating a tendency to overemphasize any evidence that the Chinese pledge is dubious. A striking feature is the persistent tendency to describe China's policy as ambiguous, despite the unequivocal wording and relatively consistent articulation of the policy.

Three anecdotes illustrate the tendency of Western observers to allow our own doubts about no first use to misinterpret Chinese statements. In 1996, China's then-Permanent Representative to the Conference on Disarmament Sha Zukang gave a telephone interview with *Newsweek* in which he misstated China's no first use policy and then excluded Taiwan on the basis that it was not a country. "China has committed itself unconditionally to a no first use policy against any state," Sha said, before adding "As far as Taiwan is concerned, it is a province of China, not a state. So the policy of no first use does not apply."<sup>21</sup>

Sha clearly misstated China's policy, describing the pledge as applicable only to states. The Chinese Foreign Ministry sent out lower ranking officials to state that Sha's statement was "incorrect" and that the use of nuclear weapons against Taiwan is "unimaginable." As a diplomat, Sha has a reputation for off the cuff remarks that are not always careful.<sup>22</sup>

Although the use of a lower ranking official to criticize Sha is an unmistakable downdressing within the Chinese system, some Americans continue to assert that Sha's remark remains evidence of a deep ambiguity in

<sup>21</sup> "Interview: Beijing's Last Blast", *Newsweek*, 12 August 1996, p. 58.

<sup>22</sup> See, for example, accounts of Sha's remarks during his time at the United Nations. See, for example, Colum Lynch, "Exclusive: China's John Bolton", *Foreignpolicy.com*, 9 September 2010, available at: [http://turtlebay.foreignpolicy.com/posts/2010/09/08/chinas\\_john\\_bolton](http://turtlebay.foreignpolicy.com/posts/2010/09/08/chinas_john_bolton)

China's no first use policy.

Second, the 2006 edition of *Chinese Military Power* devotes a text box to the question of whether China will maintain its no first use pledge. The box cites three articles, including an interview with Chu Shulong, an academic at Qinghua University. According to *Chinese Military Power* Chu "stated in a July 2005 interview printed in state-owned media that 'if foreign countries launch a full-scale war against China and deploy all types of advanced weapons except nuclear weapons, China may renounce this commitment [to no first use] at a time when the country's fate hangs in the balance.'" <sup>23</sup>

However, the way the 2006 edition of *Chinese Military Power* reports the contents of this article is problematic. The headline of this article, as translated by the Open Source Center, was "PRC Expert Warns PRC May Renounce 'No First Use' of Nuclear Weapons in War Time." In Chinese, however, the translation of the Chinese title is "PRC Expert: China's Policy on Nuclear Weapons Remains Unchanged." Moreover, the original Chinese article is unequivocal about China keeping no first use, and includes Chu's assertion that there "isn't the slightest indication that China's government will let go of this promise." Chu added that he had "not heard any leader on any occasion state China will change or let go of this position. Never." <sup>24</sup>

Third, in 2013, China issued a defense white paper that, for the first time, did not include the traditional language relating to "no first use." Some Western observers concluded that China would change its no first use policy. Chinese experts pointed out that the new White Paper was the first following a format change, in which the more traditional white paper would alternate with a "thematic" white paper. <sup>25</sup>

Finally, Francois Heisbourg took the opportunity to ask a senior Chinese official, General Qi Jianguo, Deputy Chief of the PLA General Staff, about the omission. Qi made a slight joke about the Western fixation on the white paper text, then repeated the pledge: "I want to solemnly declare that the Chinese government will never abandon the policy of no first use of nuclear weapons, which has been maintained for half a century." <sup>26</sup>

Western misperceptions are not the only problem with regard to "no first use." Most Chinese believe that "no first use" is a Chinese innovation and attribute the idea to Mao Zedong. Few Chinese official or academics are aware that the Soviet Union first put forward such a pledge, doing so as a propaganda ploy to divide the US from its allies and which it intended to violate early in a conflict with NATO. Chinese officials and academics are surprised to learn that Americans interpret their pledge in light of the American experience with the Soviet Union.

<sup>23</sup> *Military and Security Developments Involving the People's Republic of China, 2006 Annual Report to Congress*, Washington, Department of Defense, 2006, available at: <http://www.defense.gov/pubs/pdfs/China%20Report%202006.pdf>

<sup>24</sup> For Chu's comments please see the article "China's nuclear policy remains unchanged", *Boxun*, 18 July 2005, available at: <http://boxun.com/news/gb/china/2005/07/200507181307.shtml>

<sup>25</sup> Yao Yunzhu, "China Will Not Change Its Nuclear Policy", *China-US Focus*, 22 April 2013, available at: <http://www.chinausfocus.com/peace-security/china-will-not-change-its-no-first-use-policy>.

<sup>26</sup> See, for example, the remarks of Lieutenant General Qi Jianguo, PLA deputy chief of general staff, in "New Trends in Asia-Pacific Security: Q&A", panel discussion at the Shangri-La Dialogue, Singapore, 2 June 2013, available at: <http://www.iiss.org/en/events/shangri%20la%20dialogue/archive/shangri-la-dialogue-2013-c890/fourth-plenary-session-0f17/qa-57d8>.

# Challenges in Dialogue

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These differences complicate efforts at dialogue between China and the United States. Among unofficial dialogues, these challenges are merely inconvenient or cumbersome. As one participant has argued, he feels like at each meeting he builds the foundation for better understanding. And, at the next meeting, he builds the same foundation again. In a serious crisis between the two nuclear-armed powers, for example over the status of Taiwan, the differences in interpretation might interact in a way that would drive escalation.

One phenomenon that has marked recent dialogues between American and Chinese interlocutors is a tendency by Chinese observers to feel that they are being threatened by American nuclear weapons, and, more recently, by American conventional capabilities. American interlocutors tend to think through nuclear weapons issues in terms of scenario planning, whether they are talking to Russians or Chinese. Herman Kahn, for example, made a point about forcing American's to "think about the unthinkable." Robert McNamara argued that the United States could not base a credible threat on an incredible action. One interpretation of the historical evolution of US policy toward nuclear weapons employment is as a continuing search for credible options, including repeated emphasis on limited nuclear operations and tailored deterrence.

The Chinese side, however, does not have a comparable experience. Chinese leaders have seemed comfortable with the *possession* of nuclear weapons providing much of their benefit. The Chinese military did not begin to think seriously about nuclear weapons employment until the 1980s. Because Chinese observers have tended to see nuclear weapons as an instrument of bullying or coercion, they tend to regard scenario exercises in that light – as efforts to make a threat credible. As a result, when Americans attempt to explain how a no first use pledge might break down, largely to explain why Americans do not find such pledges to be credible, Chinese listeners hear a threat. They see the American side asserting that China remains vulnerable to coercion. Few Chinese have experiences in American-style academic seminars where such thought experiments are a normal pedagogical tool. Moreover, although many Chinese speak excellent English, issues of tense and condition are still difficult for non-native speakers. As a result, Chinese listeners often hear threats when Americans are attempting to make academic observations about credibility. Chinese participants seldom raise such objections in meetings, but frequently do so afterwards. On at least three occasions following Track 1.5 meetings, I found myself explaining this dynamic to

enraged Chinese participants and befuddled American colleagues. Chinese colleagues hear threats and intimidation more often than abstract musings.

A second phenomenon relates to filtering by American participants. The Chinese arsenal defies what most Americans would consider to be the basic rules for providing for deterrence. It is almost provocatively small and vulnerable, saddled with an undesirable declaratory policy. Americans are often incredulous at Chinese assertions, for example, that the two parties enjoy strategic parity, in part because in our own discourse we are unwilling to accept parity with our potential adversaries. As a result, Americans have a tendency to believe that the individuals with whom we are speaking are not the “real” policymakers or planners. Chinese interlocutors, on the other hand, are offended by the implicit slight. It is in part this issue that delayed the National Academies glossary effort, while the two sides argued over whether to include an entry for “limited nuclear deterrence.” Western academics found the term in some Chinese writings and concluded that it was of sufficient significance to warrant inclusion. Chinese experts, on the other hand, objected to both the definition provided by their American counterparts, as well as to the implication that this might be China’s policy. The undercurrent of this disagreement was a sense on the part of the American side that the Chinese were not being wholly honest with them, with a corresponding grievance from the Chinese that the Americans did not accept their participation as truthful. The much delayed final produce contained the term “limited deterrence” but with the caution that “there is no consensus on this definition” and a note that “In some descriptions it refers to France’s nuclear deterrent.”<sup>27</sup> The story is amusing, but also cautionary.

These issues distort interpretations of Chinese statements in meetings, as well as interpretations of Chinese language material. Many observers have seized on a Chinese textbook, the *Science of Second Artillery Campaigns*. Although this is an important piece of evidence, much of the enthusiasm for the text reflects a misguided sense of American experts that we are not talking to the “right” people because we do not recognize our own thinking in the answers provided by our Chinese interlocutors. A textbook offers the illusory prospect of access to a “real” dialogue that is closed to foreigners. The result, however, has been a tendency to misread such materials to affirm preexisting suspicions. In a careful comparison of the original Chinese text and a coordinated inter-agency translation of this text, Gregory Kulacki has documented a number of errors and elisions that demonstrate how American tendency to understand Chinese decisions on our terms distorts meaning. In the simplest example, an oblique reference to the United States – a certain country with nuclear weapons – is translated into a general statement about countries with nuclear weapons, which would include China<sup>28</sup>.

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<sup>27</sup> Committee on US-Chinese Glossary of Nuclear Security Terms, *English-Chinese, Chinese-English Nuclear Security Glossary*, *op. cit.*

<sup>28</sup> Jeffrey Lewis and Gregory Kulacki, “不首先使用核武器：中美核对话的困境与出路” (“NFU in Sino-US Nuclear Dialogue: Dilemma and Way Out”), *外交评论 (Foreign Affairs Review)*, Vol. 29, No. 5, 2012.

It is important to attempt to understand such documents in context. *Science of Second Artillery Campaigns* is one among a series of textbooks that was inaugurated in the early 1980s. In the United States, we think of strategy as something preceding policy. For example, we had a general strategy toward the Soviet Union referred to as “containment.” How to implement that strategy was a matter of policy. Administrations might agree on the overall approach, but chose to make different choices in emphasis. In China, the relationship is reversed: China’s nuclear policy, in this case “no first use,” preceded a strategy for employment. As John Lewis and Xue Litai have documented, Li Yuetang, chair of the Second Artillery Teaching and Research Group, led a task force with responsibility to create teaching materials on nuclear strategy for Second Artillery officers, including *The Ideological System of China’s Nuclear Strategy*. “The challenge,” they wrote, “was to keep that strategy consistent with the immutable language of nuclear policy.” Rather than view these materials as evidence of the “real” discussion within China, they are more properly understood as a professional effort to develop plausible strategic and operational concepts within the politically-imposed strictures of the “no first use” policy. These officers may chafe at such restrictions and seek strategic and operational concepts, but they do not have the status to directly challenge nuclear policy any more than they might propose overturning the party’s verdict on Tiananmen Square.



# Potential Misunderstandings in Times of Crisis

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These pathologies would not be a serious issue if they were confined to peacetime dialogues and translations of Chinese textbooks. Yet in a crisis, mutual misunderstanding could create escalatory pressures. This is not to say that the core differences of interest are based on misunderstandings – they reflect real differences between the United States and China – but that reinforcing misperceptions might make it more difficult for leaders to protect those interests without escalating.

Chinese leaders, for example, believe that the purpose of their nuclear weapons is to counter what Mao would have described as nuclear “blackmail” or “bullying.” Although Chinese leaders use less colorful language today, they continue to see the primary mission of China’s strategic forces as political – a symbol of China’s resolve not to be intimidated by the superior capabilities of the United States or Russia. Chinese textbooks discuss steps that Chinese leaders could take to signal resolve. These would include putting mobile ballistic missiles into the field and sending ballistic missile submarines out to sea in a crisis. Chinese textbooks also discuss “lowering the nuclear threshold” in response to severe conventional attacks on sensitive Chinese targets by issuing announcements over radio, television and the internet that China was no longer bound by its no first use pledge.

As we have seen, these textbooks are easy to misinterpret. Many readers conflate passages about conventional operations with nuclear ones. Other readers have wrongly interpreted “lowering the nuclear threshold” to mean that China intends to use nuclear weapons early in conflict, not as a last resort measure to deal with conventional attacks on strategic assets. Chinese forces, too, offer considerable opportunity for confusion. China deploys conventional variants of the nuclear-armed DF-21 and is developing an anti-ship version of the missile (DF-21D). Such misunderstandings and ambiguities would color the US interpretation of a Chinese decision to place strategic forces on alert. Chinese leaders may believe they are sending a signal of resolve; an American president might conclude that these are preparations for an attack.

The United States and China have experienced several tense crises in recent years, arising from the operation of military forces in close proximity to one another. In 2001, a US EP-3E reconnaissance aircraft collided with a Chinese fighter jet, killing the Chinese pilot and forcing the

EP-3E to land on Hainan Island. China detained the crew for 11 days, while the United States and China negotiated the return of the crew and the aircraft. More recently, in March 2009, the United States Navy announced that “five Chinese vessels shadowed and aggressively maneuvered close to the USNS *Impeccable* in the South China Sea...” Although the *Impeccable* was described as “oceanographic ship” that was “conducting routine operations in international waters,” the Chinese viewed the ship as conducting surveillance for anti-submarine warfare activities. Although it was operating well within the boundaries of international law, the Chinese activities may have been motivated by a desire to protect sensitive submarine operations in the area.

These two incidents illustrate that US-Chinese forces, operating in close proximity to one other during a crisis, face serious strategic stability challenges. Based on press reports of exercises, in a crisis China would disperse mobile ballistic missiles and fuel missiles in fixed sites.<sup>29</sup> How would American policymakers react, especially if our own forces were placed on alert? The history of US alert operations suggests that alert operations have an inherent escalatory potential. Scholarly studies of past US strategic alerts reveal that orders are frequently misunderstood and ambiguous events misinterpreted to confirm the sense of crisis.<sup>30</sup> We can imagine, for instance, the potential for escalation if Chinese missile submarines were put out to sea during a crisis. US attack submarines would surely attempt to tail them. What would happen if two submarines collided? Or if the Chinese submarine suffered a crippling accident, like the torpedo explosion that sank the Russian submarine *Kursk*?

Would Chinese policymakers, in a crisis atmosphere, be able to distinguish the loss of contact with submarines from early efforts to eliminate their deterrent? How would US policymakers react if China appeared to prepare mobile ballistic missiles that could perform anti-satellite missions? Or anti-ship DF-21D missiles that, externally, are identical to China's nuclear-armed DF-21 and DF-21As? It is impossible to predict. But the recent history of US-Chinese crisis stability is not encouraging

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<sup>29</sup> For example, one exercise is described in Dong Jushan and Wu Xudong, “Build New China's Shield of Peace”, *Beijing Zhongguo Qingnian Bao*, 1 July 2001, FBIS-CPP-2001-0703-000119.

<sup>30</sup> Scott D. Sagan, “Nuclear Alerts and Crisis Management”, *International Security*, Vol. 9, No. 4, Spring 1985, p. 136.

# A proposed Joint Statement on Strategic Stability

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**H**ow might the United States and China reinforce strategic stability in a crisis? The fundamental problem appears to be that Chinese leaders, in an effort to stop what they perceive as coercion and blackmail, will place their nuclear forces on alert – a step that an American President may incorrectly view as a prelude to an attack. The challenge is that neither party can credibly signal its resolve without running the risk that the other party will interpret the signal as escalatory.

At the root of the disagreement is that each party believes the other intends to use its nuclear weapons in a crisis to impose an unfavorable settlement on the other. This problem is not unlike the broad geopolitical challenge represented by Taiwan, a situation in which neither party finds the status quo acceptable – but each prefers the status quo to outright hostilities.

The experience with Taiwan offers a useful precedent. It is worth recalling that in 1972, in crafting the Shanghai Communiqué, the United States and China were able to creatively work around the severe handicap that Washington did not even recognize Beijing as the rightful government of China. They did so through artful wordsmithing that did not obscure their differences as much as make clear the interests both shared. Even if Washington and Beijing could not agree on the status of Taiwan, they could agree that there was only one China and that the status of Taiwan was to be decided by the Chinese themselves. That was enough. A similar agreement is needed on the subject of nuclear weapons and strategic stability.

A likely agreement centers around two pledges; The United States must offer an assurance that makes clear it does not seek to negate China's deterrent, even if China must accept that the assurance will not take the form of a "no first use" pledge. Such an assurance would be political in nature, amounting to a statement of policy. For its part, China must make clear that it does not seek numerical parity with the United States or to otherwise undermine US extended deterrence.

Such an agreement – a Shanghai Communiqué for Strategic Stability – would offer a number of advantages.

First, such an agreement would stop the formulaic calls for no first use and transparency that crowd out meaningful dialogue in the limited opportunities afforded for official US-China discussion on strategic stability. US and Chinese policymakers are likely to continue to disagree about China's modernization of its strategic forces, as well as the US development of missile defenses and conventional strike capabilities. The mutual statements in a formal communiqué create an opportunity for both parties to explain how these modernization programs reinforce, rather than undermine the status quo.

Second, such an agreement could provide a set of limited transparency measures. Chinese objections to US calls for transparency are grounded in the perception that such approaches are open-ended. If the United States and China were to agree to the pledges suggested above, however, one could imagine they could also agree to a set of transparency measures that seek to build confidence in specific commitments. For example, if China pledged not to seek numerical parity, it might disclose some information about the number of Second Artillery bases and brigades, but not the precise number of launch units per brigade. The United States, in seeking to emphasize that it does not seek to negate the Chinese deterrent, might provide briefings on the actual capabilities of planned missile defense and conventional strike programs. A Joint Statement, and the ensuing dialogue, would not resolve all the concerns held by US and Chinese policymakers anymore than the Shanghai Communiqué resolves the status of Taiwan. But it might provide a more effective basis for managing these concerns, emphasizing the shared interests of the two parties in strategic stability and regional security.

Third, dialogue may provide important benefits for stability in the event of a crisis. Currently, China keeps its strategic forces off alert, with warheads stored separately from missiles. In the event of a crisis, Chinese policymakers may intend to alert these forces to signal their resolve. It remains unclear if the United States would understand such a signal, or interpret Chinese mobilization as launch preparations. In peacetime, it is merely cumbersome that the two countries have radically different ideas about the role of nuclear weapons and limited ability to communicate with each other. In a crisis, it could be quite dangerous.

# Conclusion

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China's nuclear posture has been remarkably consistent, probably owing in large part to path dependence issues. China only completed its plan to develop four different types of missiles in eight years during the late 1980s with the deployment of non-trivial numbers of DF-5 ICBMs – after more than two decades of development. China's current modernization programs, such as the DF-31, were established during the Deng Xiaoping years, meaning that China's current forces are the result of choices made in the distant past by veterans of China's Long March. Mao's pronouncement of a policy of no first use remains the policy of the Chinese government.

At the same time, contemporary China today is rapidly changing. Chinese policymaking is no longer chaotic and plagued by mass campaigns such as the Great Leap Forward and the Cultural Revolution. The scale of that change, however, does not reflect a fully reformed planning system. China's model of economic and political liberalization dates back to the decisions made around the events of June 4, 1989 when China's semi-retired "elders", led by Deng Xiaoping, intervened to set China on a path of partial economic liberalization without substantial political liberalization. The politics surrounding the fate of Bo Xilai today are not so different from those surrounding the fate of his father, Bo Yibo, during the Cultural Revolution. Chinese politics remains characterized by factionalism and economic interests. The fact that the arrest of Zhou Yongkang on corruption charges is widely interpreted as a blow to the power of the petroleum industry suggests that internal politics still dominate strategic considerations.

The People's Liberation Army is vastly more professional today. Moreover, it appears to dominate the weapons development process for the first time in its history. Whether this means the Second Artillery will seek to expand China's nuclear arsenal or emphasize conventional missiles is simply impossible to tell. Clairvoyance, however, is not necessary to manage relations among nations. Diplomatic relations exist precisely to inform our policy choices and allow us to negotiate different outcomes than we might reach on our own. The current state of dialogue between the United States and China, at least on the subject of nuclear weapons, is not quite yet adequate to that task.



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