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# **China's Nuclear Modernization and Expansion: Ways Beijing Could Adapt its Nuclear Policy**

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and Expansion: Ways Beijing Could  
Adapt its Nuclear Policy**

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## Executive Summary

China's nuclear policy has been remarkably consistent since it first acquired nuclear weapons in 1964. Relying on a policy of minimum deterrence, while touting both a No First Use and Sole Purpose policy, China made this policy credible with a small but effective nuclear force capable of delivering a secure second strike. China's nuclear policy was designed to deter nuclear attack and nuclear blackmail; however, China's strategic ambitions and its security environment have changed significantly since its policy was first devised. China's nuclear modernization program has been accompanied by an unprecedented expansion in the size of its nuclear force. The increase in the size and flexibility of the force enables China to expand its nuclear strategy beyond this traditional posture. Will China remain dedicated to its No First Use and Sole Purpose policies? Will it maintain its countervalue strategy or transition to a counterforce strategy or a hybrid of both? The outcome of Chinese strategists' debates on China's future deterrence posture will have implications for the United States and its allies and partners. However, the insight the United States has into China's policy process and development is limited. This limited insight means it is prudent to make assessments on potential strategic choices and policy decisions that China may adopt in order to inform U.S. policy development.

## Introduction

That China is modernizing its nuclear forces is not shocking as it has been conducting modernization on both its nuclear and conventional forces since Deng Xiaoping assumed power in the 1980s and began his extensive transformation of the Chinese system. What has taken world leaders by surprise is the revelation of the extent of China's nuclear modernization and expansion program in the last several years. General John Hyten, former Vice Chairman of the Joint Chiefs of Staff, described China's nuclear modernization as "unprecedented,"<sup>1</sup> while Admiral Charles Richard, Commander of United States Strategic Command, stated "China's explosive growth and modernization of its nuclear and conventional forces can only be what I describe as breathtaking."<sup>2</sup>

Historically, China has adhered to a minimum deterrent strategy made credible by a small nuclear force. This deterrent strategy focused on a small number of nuclear weapons capable of executing a secure second-strike capability and touted both a Sole Purpose and No First Use policy.<sup>3</sup> The growth of China's nuclear capabilities, coupled with China's strategic ambitions suggests that Chinese strategists' assessments of the utility of nuclear weapons and the capabilities necessary for reliable deterrence have

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<sup>1</sup> John Grady, "Hyten: China's 'Unprecedented Nuclear Modernization' Chief Concern," *USNI News* (September 14, 2021), available at <https://news.usni.org/2021/09/14/hyten-chinas-unprecedented-nuclear-modernization-chief-concern>.

<sup>2</sup> Charles Richard, Remarks at the Space and Missile Defense Symposium, August 12, 2021, available at <https://www.stratcom.mil/Media/Speeches/Article/2742875/space-and-missile-defense-symposium/>.

<sup>3</sup> The People's Republic of China, *The Science of Military Strategy 2013*, Translated by China Aerospace Studies Institute, US Air University (February 2, 2021) pp. 213-232.

changed. However, due to the lack of transparency into China's nuclear program it is difficult to discern what those changes are and how it will impact China's nuclear strategy and force structure going forward. The changes in the size and capability of its force, coupled with a potential change in strategy, pose a strategic risk to the United States and its allies in the region and globally.

Deterrence strategy in the United States has continuously evolved since it first came to prominence after World War II. The debate surrounding deterrence and the necessary ingredients for a robust and reliable deterrent was lively and can be observed in the evolution of U.S. deterrence policy and force sizing over the decades. Though not as transparent, the debates in China surrounding its deterrent posture are probably no less lively. Given the current advancements in size and capabilities of the Chinese nuclear force and the potential for growth in the future, the possibilities for ways in which China could adapt its strategy and policy are numerous. Understanding how China is adapting its concept of deterrence to its assessment of its security environment should inform and underpin the security strategy of the United States.

## **China's Traditional Nuclear Strategy**

In its official statement announcing the successful test of nuclear weapons in 1964, the government of China declared "that China will never at any time and under any circumstances be the first to use nuclear weapons," while also announcing its dedication to the complete elimination of nuclear weapons.<sup>4</sup> China's nuclear strategy has remained remarkably consistent since that time. China's Academy of

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<sup>4</sup> "Statement of the Government of the People's Republic of China," October 16, 1964, History and Public Policy Program Digital Archive, PRC FMA 105-01262-01, 22-26. Obtained by Nicola Leveringhaus, available at <https://digitalarchive.wilsoncenter.org/document/134359>.

Military Sciences publishes *The Science of Military Strategy*, a textbook used to train PLA leaders. It is a comprehensive text of China's strategic thought, to include a holistic description of its nuclear strategy. *The Science of Military Strategy* published in 2013 has a robust discussion of Chinese nuclear strategy. It divides the discussion of deterrence and nuclear modernization into four parts; first, a description of China's security environment; second, an outline of its nuclear deterrent strategy; third, the forces needed to make that strategy credible; and finally, China's position on arms control. While the 2020 version of the text altered its discussions of nuclear development and expansion significantly, the discussion of China's nuclear strategy was not as comprehensive as the 2013 version, nor did there appear to be many changes.<sup>5</sup>

One caveat when reading Chinese strategy documents: Chinese leaders tend to believe that China is peace-loving, unlike its neighbors or the United States. Andrew Scobell, a Senior Political Scientist at the RAND corporation has spent significant time analyzing China's strategic culture and its impact on Chinese use of force. He contends that it is both offensive and defensive, resulting in a "dualistic strategic culture." He states, "The mixture of these two outlooks is a worldview that rationalizes the use of force, even when used in an offensive capacity, as a purely defensive measure. This mixture predisposes Chinese leaders to offensive military operations while rationalizing them as being purely defensive."<sup>6</sup> This defensive cultural characteristic is prevalent in all of China's strategy documents and military white papers, but does not preclude China from taking offensive actions, though

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<sup>5</sup> Marcus Clay, Roderick Lee, "Unmasking the Devil in the Chinese Details: A Study Note on the Science of Military Strategy 2020," China Aerospace Studies Institute, Air University (January 2022) pp. 2-3.

<sup>6</sup> Thomas G. Mahnken, "Secrecy & Stratagem: Understanding Chinese Strategic Culture," The Lowy Institute (February 2011) p. 7.



Chinese leaders may rationalize that it was for defensive purposes. So, while China's deterrence strategy may be read as purely defensive, one may want to take this with a grain of salt.

*The Science of Military Strategy's Security  
Environment Assessment in 2013*

For China, nuclear weapons are an important and lasting component of the security environment. Though China fully supports the "thorough elimination of nuclear" weapons, the global security environment does not currently allow for that. Though the United States and Russia made significant reductions in their respective nuclear forces due to treaty obligations, and in Russia's case fiscal constraints and the retirement of older systems,<sup>7</sup> *The Science of Military Strategy* contends that a "'nuclear weapons free world' is still far from possible."<sup>8</sup> Further, China identifies that "an extremely small number of non-nuclear-weapons states are working hard to develop nuclear weapons," which further inhibits a nuclear-free world and necessitates that China maintain its nuclear capabilities.<sup>9</sup>

China notes that the threat of a "nuclear world war" has decreased, but that this did not result in a fundamental change in nuclear strategy following the end of the Cold War. While the reduction in the threat of nuclear war has improved the security environment, in China's view there has not been a significant change to the strategies of nuclear powers. Unlike China, neither Russia nor the United States

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<sup>7</sup> Amy F. Woolf, "Russia's Nuclear Weapons: Doctrine Forces, and Modernization," The Congressional Research Service (April 21, 2022), pp. 16-17, available at <https://crsreports.congress.gov/product/pdf/R/R45861/15>.

<sup>8</sup> *The Science of Military Strategy 2013*, p. 214.

<sup>9</sup> *Ibid.*

have a “no first use” nuclear policy and “pursue nuclear deterrence strategies established on the basis of first use of nuclear weapons.”<sup>10</sup> For China, this means that the fundamental competition in the nuclear domain has changed little from the Cold War, meaning that the threat, while diminished, is not absent.

Finally, China defined four “nuclear security circumstances” that were making its security environment more complex and dangerous. First, China identified the United States as its primary nuclear security concern, identifying it as “the nation with the most powerful nuclear real strength in the world,” and expressing concern that the United States “regards China as the main strategic opponent.”<sup>11</sup> The document was particularly concerned with the growing U.S. missile defense architecture in East Asia and the effectiveness of U.S. nuclear forces. Second, the growing number of nuclear powers on China’s periphery is an increasing threat, with the document specifically acknowledging India’s development had been “swift.” Third, the U.S. development of conventional weapons capable of “executing conventional strikes against our missile nuclear forces” was identified as a security concern because of its ability to “weaken our nuclear deterrence effectiveness.” Lastly, the disparity in the size between China’s nuclear arsenal and that of the United States and Russia, when faced with these growing security threats, placed growing external pressure on China to modernize its force.<sup>12</sup>

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<sup>10</sup> *Ibid.*, p. 215.

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*, pp. 215-216.

### *Nuclear Deterrence with Chinese Characteristics*

*The Science of Military Strategy* recognizes deterrence as the primary purpose of nuclear weapons. It identifies nuclear deterrence as “the main pattern of military struggle in the nuclear domain” not only for China, but for other nuclear powers as well.<sup>13</sup> The document breaks the discussion of nuclear deterrence down into two major areas: the characteristics of China’s nuclear deterrence and how China applies nuclear deterrence in its security environment.

*The Science of Military Strategy* describes three key characteristics of China’s nuclear deterrence: focused, limited and defensive. China’s nuclear deterrence is focused on other nuclear armed states and offers a negative security assurance to non-nuclear states declaring, “China has openly announced and promised that it will not use or threaten to use nuclear weapons against nations and areas not having nuclear weapons.” It is limited, stating that the sole purpose of nuclear deterrence is to deter nuclear attack and does not conceive of a role for nuclear weapons “detering nonnuclear hostile military activities.” And finally, it is defensive due to its commitment to only use nuclear weapons after an adversary has struck. This “No First Use” declaration requires an effective counterattack capable of causing “the enemy unsustainable nuclear destruction.”<sup>14</sup>

When discussing the application of nuclear deterrence to China’s security environment, *The Science of Military Strategy* emphasizes: the existential nature of nuclear weapons; a focus on retaliatory deterrence; nuclear deterrence tactics; and how those tactics should be tailored to specific circumstances. Because the central attributes of nuclear weapons are their lethality and destructiveness, a

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<sup>13</sup> Ibid., p. 216.

<sup>14</sup> Ibid., pp. 216-217.

small nuclear force with limited capability can pose an existential threat. Therefore, China employs an “existential deterrent strategy” based on a “small but streamlined” nuclear force capable of executing a nuclear counterattack.<sup>15</sup> However, the state that uses nuclear weapons first “is certain to suffer nuclear retaliation from its adversary.” To guard against this, China states it is committed to not using nuclear weapons first.

Because China’s nuclear force is significantly smaller than that of Russia or the United States, it must understand nuclear deterrence tactics in order to ensure the credibility of its deterrent. The first tactic is ambiguity. “Maintaining moderate ambiguity in nuclear deterrence issues causes the adversary to guess at China’s nuclear real strength.”<sup>16</sup> The second is ensuring that China’s adversaries “truly believe in and truly fear” its nuclear forces. This requires an effective strategic communications campaign during peacetime and crisis that conveys China’s resolve. Finally, these tactics need to be tailored for each nation, event and circumstance.<sup>17</sup>

### *Nuclear Force Requirements for a Credible Deterrent*

While *The Science of Military Strategy* acknowledges that the threat of large-scale nuclear war has decreased, the authors are concerned that the possibility of a “future informationized conventional war developing into a nuclear war still remains.”<sup>18</sup> Therefore China’s nuclear deterrent must be credible and effective to “halt the outbreak of nuclear war.” To accomplish this, *The Science of*

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<sup>15</sup> Ibid., p. 217.

<sup>16</sup> Ibid., p. 218.

<sup>17</sup> Ibid., pp. 218-219.

<sup>18</sup> Ibid., p. 219.

*Military Strategy* posits that China must be able to execute “nuclear real combat” operations. Nuclear real combat, or nuclear warfare, can be either preemptive or reactive. However, due to China’s commitment to no first use of nuclear weapons, and the defensive nature of its nuclear strategy, Chinese nuclear forces need to be capable of executing a retaliatory nuclear counterattack.<sup>19</sup>

Retaliatory nuclear warfare requires centralized command and joint planning, a survivable force, a capable force, and the ability to manage escalation. Centralized command and joint planning require that the release authority for nuclear weapons resides at “the supreme decision-making level” due to the strategic nature of nuclear warfare. The senior decision makers will have a clearer picture of the overall “political struggle and diplomatic struggle.” Further, due to the defensive nature of China’s nuclear strategy, China’s forces will most likely suffer an attack prior to the execution of nuclear strikes. This requires that the Second Artillery Corps (now Rocket Force) and the sea-based nuclear force conduct joint planning in order to conduct “unified employment of all surviving, even more limited nuclear forces...to realize the strategic objectives of nuclear counterattack.”<sup>20</sup>

China’s nuclear force must be survivable in order to execute retaliatory nuclear strike operations. This is made more difficult, as *The Science of Military Strategy* points out, because China’s nuclear forces will most likely be the target of an enemy’s nuclear first strike. To increase survivability, China needs to increase intelligence on the status of adversary nuclear forces, increase the timeliness and accuracy of early warning and be prepared to place its nuclear forces on alert in protective sites. To do this, China will use mobile missiles with multiple hidden sites to

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<sup>19</sup> Ibid., p. 220.

<sup>20</sup> Ibid.

prevent the adversary's ability to target them. Further, China will develop a launch on warning capability to be able to execute a counterattack prior to the "enemy nuclear payloads [having] reached their targets and effectively exploded." *The Science of Military Strategy* contends that launch on warning is fully consistent with China's no first use nuclear policy, in addition to increasing the survivability of its nuclear forces.<sup>21</sup>

China's nuclear force must be capable of targeting that which the adversary most values. There are two types of main targets: military targets and urban targets. Striking military targets is described as beneficial, as they can have a direct impact on the conflict while still shaping the political situation. Military targets may be less escalatory, but they require precision strikes to limit damage and may require a larger nuclear force. Urban targets cause enormous shocks, casualties and disruption to the adversary's society and generally require fewer, less precise nuclear capabilities to accomplish. When China's strategy was crafted, China's nuclear forces were less capable with limited numbers. The document stresses that this requires China to put more emphasis on "meticulous selection of targets...to boost the real results."<sup>22</sup> Finally, this target selection must focus on managing escalation by "displaying [China's] firm resolve" and also "control[ing] the counterattack intensity, tempo, and scope of objectives" to avoid creating further nuclear escalation by the adversary.<sup>23</sup>

### ***Nuclear Arms Control and Disarmament***

*The Science of Military Strategy* details China's commitment to the global elimination of nuclear weapons, a position it

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<sup>21</sup> Ibid., p. 221.

<sup>22</sup> Ibid., p. 221.

<sup>23</sup> Ibid., pp. 221-222.

has held since it first obtained a nuclear capability in the 1960s. It praises arms control as a mechanism to enhance strategic stability, reduce the risk of nuclear war, and if deterrence fails, reduce the destructiveness of nuclear conflict. However, China does not believe that conditions are right for it to join the nuclear arms control process, and the onus is on the states with the largest nuclear arsenals to reduce further before it would be appropriate for China to consider joining. China's chief concern is that larger states could use arms control to "maintain their own nuclear superiority and...weaken the nuclear capability of their strategic opponents."<sup>24</sup>

While China acknowledges that pressure is increasing for it to join arms control and disarmament negotiations, it notes that China's nuclear forces are relatively weak and its arsenal considerably smaller than other powers. This would put China in a weak position if it were to enter negotiations. For China to consider arms control, its nuclear strength must increase. This nuclear strength will enable China to take the lead in negotiations and "progressively gain the initiative in the nuclear arms control and disarmament struggle."<sup>25</sup> China views arms control as a "zero-sum military and political struggle."<sup>26</sup> Above all, China's security must be protected and *The Science of Military Strategy* calls for prudence, stating "when the timing is not ripe, the conditions not present, the grasp of the adversary's motives not accurate, or the aftermath of activities difficult to forecast, we must not go off the deep end."<sup>27</sup>

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<sup>24</sup> Ibid., pp. 222-223.

<sup>25</sup> Ibid., pp. 223-224.

<sup>26</sup> Henrik Stalhane Hiim and Magnus Langset Troan, "Hardening Chinese Realpolitik in the 21<sup>st</sup> Century: The Evolution of Beijing's Thinking about Arms Control," *The Journal of Contemporary China* (May 25, 2021), p 88.

<sup>27</sup> Ibid., p. 224.

## China's Changing Security Environment

In 2012, Xi Jinping walked out onto the stage at the closing of the 18<sup>th</sup> Party Congress as the new Chairman of the Chinese Communist Party. Soon after, he assumed the position of Chairman of the Central Military Commission and President of the Chinese government. He immediately set about consolidating power. His success in eliminating rivals and taking over leadership of key areas in the Chinese government has made him the most influential leader of China since Mao Zedong.<sup>28</sup> His personal ambition to become China's preeminent leader was just the first step in making China the Asia-Pacific's preeminent power.

After taking power, Xi articulated his vision for China in a series of speeches outlining his "Chinese Dream." Described as the Two Centenary Goals, the first was to become a "moderately prosperous society in all respects" by the one hundredth anniversary of the founding of the Chinese Communist Party in 2021.<sup>29</sup> In a speech commemorating the 100<sup>th</sup> anniversary of the Party's founding, Xi Jinping announced that this goal had been achieved, stating, "On this special occasion, it is my honor to declare on behalf of the Party and the people that through the continued efforts of the whole Party and the entire nation, we have realized the first centenary goal of building a moderately prosperous society in all respects."<sup>30</sup> The

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<sup>28</sup> Minxin Pei, "China's Return to Strongman Rule," *Foreign Affairs* (November 1, 2017), available at <https://www.foreignaffairs.com/articles/china/2017-11-01/chinas-return-strongman-rule>.

<sup>29</sup> Benjamin Carlson, "The World According to Xi Jinping," *The Atlantic* (September 21, 2015), available at <https://www.theatlantic.com/international/archive/2015/09/xi-jinping-china-book-chinese-dream/406387/>.

<sup>30</sup> Xi Jinping, "Full text of Xi Jinping's speech on the CCP's 100<sup>th</sup> anniversary," *Nikkei Asia* (July 1, 2021), available at



second goal is to become a “fully developed, rich, and powerful” country and to achieve the “great rejuvenation of the Chinese nation” by the one hundredth anniversary of the founding of the People’s Republic of China in 2049.<sup>31</sup> In addition to setting milestones for China’s development, the Chinese Dream objectives include leading “the reform of the global governance system,” altering aspects of the status quo viewed “as incompatible with the sovereignty, security, and development interests” of China and “full reunification” with Taiwan on Beijing’s terms.<sup>32</sup> These are goals which put China directly at odds with not only its regional neighbors, but with the United States and its allies.

Under Xi’s leadership, China has become more aggressive in trying to achieve its aspirations. This has provoked responses from not only nations in the region concerned about their sovereignty and access to disputed resources, but other nations concerned with the international governance system. Further, the United States has abandoned engagement as its primary strategy for China and adopted a more confrontational approach, causing China’s deputy Foreign Minister to comment that “a whole-of-government and whole-of-society campaign is being waged [by the United States] to bring China down.”<sup>33</sup>

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<https://asia.nikkei.com/Politics/Full-text-of-Xi-Jinping-s-speech-on-the-CCP-s-100th-anniversary>.

<sup>31</sup> Graham Allison, “What Xi Jinping Wants,” *The Atlantic* (May 31, 2017), available at <https://www.theatlantic.com/international/archive/2017/05/what-china-wants/528561/>.

<sup>32</sup> Department of Defense, *Military and Security Developments Involving the People’s Republic of China*, 2020, p. 3, available at <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>.

<sup>33</sup> Michael Beckley and Hal Brands, “The End of China’s Rise,” *Foreign Affairs* (October 1, 2021), available at <https://www.foreignaffairs.com/articles/china/2021-10-01/end-chinas-rise>.

In 2019, China's Defense White Paper, titled *China's National Defense in the New Era*, acknowledged that international competition was increasing and that specifically, the United States had adjusted its defense and national policies towards China. It stated, "[The US] has provoked and intensified competition among major countries, significantly increased its defense expenditure, pushed for additional capacity in nuclear, outer space, cyber and missile defense, and undermined global strategic stability."<sup>34</sup> It is clear from China's official documents that it views the United States as its direct rival and major strategic competitor.

However, strategic competition is not limited to the United States. The increase in Chinese power, both economic and military, has prompted U.S. allies to take additional measures to counter Chinese ambitions. Australia, the United Kingdom and the United States formed the AUKUS partnership, with the allied leaders reaffirming "their commitment to a free and open Indo-Pacific, and more broadly to an international system that respects human rights, the rule of law, and the peaceful resolution of disputes free from coercion."<sup>35</sup> The AUKUS partnership has two major provisions. The first is the sale of nuclear-powered submarines to Australia. The second is to provide more advanced military capabilities to "promote security and stability in the Indo-Pacific region."<sup>36</sup>

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<sup>34</sup> The People's Republic of China, *China's National Defense in a New Era*, The State Council Information Office (July 2019), available at <https://www.andrewerickson.com/2019/07/full-text-of-defense-white-paper-chinas-national-defense-in-the-new-era-english-chinese-versions/>.

<sup>35</sup> The White House, "FACT SHEET: Implementation of the Australia-United Kingdom-United States Partnership," Statements and Releases (April 5, 2022), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2022/04/05/fact-sheet-implementation-of-the-australia-united-kingdom-united-states-partnership-aukus/>.

<sup>36</sup> *Ibid.*

Responding to the AUKUS announcement, Chinese Foreign Ministry spokesman Zhao Lijian commented, “nuclear submarine cooperation between the United States, the United Kingdom and Australia has seriously undermined regional peace and stability, intensified the arms race and undermined international non-proliferation efforts.”<sup>37</sup> Wang Yi, China’s Foreign Minister, further emphasized this sentiment, stating that the AUKUS agreement “may trigger the risk of nuclear proliferation, induce a new round of arms race, and undermine regional prosperity and stability.”<sup>38</sup>

In addition to formal alliances, informal partnerships among nations have also been reinvigorated to counter the perceived Chinese threat. The Quadrilateral Security Dialogue, or Quad, composed of Australia, India, Japan and the United States, has been rejuvenated in the last few years as concern about China’s increasing power and ambitions has grown. In 2022, the Quad released a joint statement following their most recent meeting in Tokyo. While it did not mention China specifically, it did emphasize “our strong resolve to maintain the peace and stability in the region,” while “strongly oppos[ing] any coercive, provocative or unilateral actions that seek to change the status quo and increase tensions in the area, such as the militarization of disputed features, the dangerous use of coast guard vessels and maritime militia, and efforts to disrupt other countries’ offshore resource exploitation activities.”<sup>39</sup> These are all actions that China has taken in

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<sup>37</sup> Jia Deng, “AUKUS: Why Beijing Didn’t go Ballistic,” *The Lowy Interpreter* (October 14, 2021), available at <https://www.loyyinstitute.org/the-interpreter/aukus-why-beijing-didn-t-go-ballistic>.

<sup>38</sup> *Ibid.*

<sup>39</sup> The White House, “Quad Leaders Join Statement,” *Statements and Releases* (May 24, 2022), available at <https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/24/quad-joint-leaders-statement/x>.

recent years to coerce regional nations and consolidate power over disputed territory.

A samurai in full battle dress rides a mighty steed on the cover of Japan's latest Defense White Paper. In years past, the covers have been adorned with Mount Fuji and pink plum blossoms, or a view of the Earth from space. The symbolism of the change in artwork should not be lost. Japan's cultural norm of anti-militarism, and its constitution that forbids it to wage aggressive war, has led to a debate in Japan on how far it should go to protect and defend the international system under which it has prospered.<sup>40</sup> The change in cover art was the first among many notable changes in the Defense White Paper suggesting that the debate is tipping towards a more active and assertive Japan. Most concerning for China, is that Japan identifies Taiwan as directly related to Japan's security, stating "Stabilizing the situation surrounding Taiwan is important for Japan's security and the stability of the international community. Therefore, it is necessary that we pay close attention to the situation with a sense of crisis more than ever before."<sup>41</sup> The release of the White Paper came on the heels of Japan's Deputy Prime Minister stating that a Chinese invasion of Taiwan would be an "existential threat (to Japan) since Okinawa could be next" and further discussed the possibility of deploying Japan's Self-Defense Force to defend Taiwan with the United States.<sup>42</sup>

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<sup>40</sup> Jennifer Bradley, "Tailored Engagement: Assessing Japan's Strategic Culture and its Impact on U.S.-China Competition," *Comparative Strategy* (Forthcoming 2022)

<sup>41</sup> Japanese Ministry of Defense, *Defense of Japan 2021*, Government of Japan (2021), p. 19.

<sup>42</sup> Bruce Klingner, "Japan's Newfound Boldness on Defending Taiwan," The Heritage Foundation (July 29, 2021), available at <https://www.heritage.org/asia/commentary/japans-newfound-boldness-defending-taiwan>.

Beyond international resistance to China's ambitions, China's security environment is being complicated by internal issues as well. China's environmental degradation has resulted in an acute strain on its already limited water resources, which is undermining its food and energy security, as well as its internal stability.<sup>43</sup> Further, the legacy of the One Child Policy means that China's workforce is decreasing, with growing responsibility for an increasingly aging population. This, plus unrealized economic reforms and expanding debt, will challenge China's ability to continue its economic "miracle" unabated.<sup>44</sup> This may put pressure on China to achieve and consolidate its goals sooner rather than later.

At the turn of the century, Chinese leaders perceived a favorable security environment which would provide a "strategic window of opportunity" to complete the revitalization of the nation.<sup>45</sup> The international resistance to China's ambitions to reshape the global order and establish its sphere of influence, coupled with the internal difficulties that it faces, means that China's strategic window of opportunity may be closing. This more challenging and potentially dangerous security environment is the backdrop to China's modernization and expansion of its nuclear force. Further, as China's force expands in size and capability, it may choose to adapt its nuclear policy and doctrine to better address the security challenges it faces.

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<sup>43</sup> Jennifer Bradley, "Water: The Dragon's Achilles Heel," *Comparative Strategy* (Spring 2020).

<sup>44</sup> Michael Beckley and Hal Brands, *op. cit.*

<sup>45</sup> Evan S. Medeiros, *China's International Behavior*, RAND (2009) p. xvi, available at <https://www.rand.org/pubs/monographs/MG850.html>.

## China's Growing Nuclear Force

The modernization of both the quality and quantity of China's nuclear force has been occurring for decades. In 1999, China debuted the DF-31 road mobile Intercontinental Ballistic Missile (ICBM) during a parade celebrating the 50<sup>th</sup> anniversary of the People's Republic of China. This was the first road mobile missile that China developed, and deployed several years later, capable of targeting the United States.<sup>46</sup> China continued to add new capabilities to its nuclear arsenal during the first decade of the 21<sup>st</sup> century making consistent progress in developing a nuclear force capable of delivering a secure second-strike capability. In 2005, when China was still significantly disadvantaged in the nuclear balance, Lyle J. Goldstein, while a professor at the Naval War College, predicted that Chinese nuclear development "may emerge as one of the most important quandaries confronting twenty-first-century strategists."<sup>47</sup>

Since Dr. Goldstein made that prediction, the People's Liberation Army Rocket Force (PLARF), charged with the land based nuclear mission, was elevated to full service status in 2015. Giving the PLARF equal status as the Army, Navy and Air Force reveals the importance with which China views its strategic capabilities. In fact, Chinese President Xi has described the PLARF as "China's core force for strategic deterrence, a strategic buttress for China's position as a major power, and an important cornerstone for defending national security."<sup>48</sup> The elevation of the force has emphasized joint exercises and joint training with the

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<sup>46</sup> Lyle J. Goldstein, *China's Nuclear Force Modernization* (Newport, RI: Naval War College Press, 2005), p. 2.

<sup>47</sup> *Ibid.*, p. 5.

<sup>48</sup> Michael S. Chase, "PLA Rocket Force Modernization and China's Military Reforms," Testimony before the U.S.-China Economic and Security Review Commission (February 15, 2018), p. 1, available at <https://www.rand.org/pubs/testimonies/CT489.html>.

other services, improving the PLA's ability to coordinate respective force campaigns and strategic operations.<sup>49</sup>

With the increasing importance of its strategic forces, China has also accelerated and diversified its nuclear weapons development and modernization. China maintains its legacy silo-based DF-5 ICBMs, though they have upgraded the system to carry Multiple Independent Reentry Vehicles (MIRVs).<sup>50</sup> After fielding the DF-31 road mobile ICBM in 2006, the PRC developed the DF-31A, an improved version with a range of up to 11,200 km, significantly greater than the DF-31's range of 7,000 km.<sup>51</sup> China currently has the DF-41 in production. It was flight tested in 2016 and became operational in 2020 with at least two brigades fielded.<sup>52</sup> It is suspected that the solid-fueled missile will be both road mobile and silo-based, replacing the liquid-fueled DF-5, and will be capable of carrying 10 warheads with a range of 12,000-15,000 km.<sup>53</sup>

In addition to developments in its ICBM force, the PLARF has been developing medium-range and intermediate-range ballistic missiles (MRBM, IRBM) that

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<sup>49</sup> David C. Logan, "Making Sense of China's Missile Forces," in *Chairman Xi Remakes the PLA*, edited by Phillip C. Saunders, Arthur S. Ding, Andrew Scobell, Andrew N.D. Yang, and Joel Wuthnow (Washington, D.C.: National Defense University Press, 2019), p. 415, available at

[https://ndupress.ndu.edu/Portals/68/Documents/Books/Chairman-Xi/Chairman-Xi\\_Chapter-11.pdf?ver=2019-02-08-112005-803](https://ndupress.ndu.edu/Portals/68/Documents/Books/Chairman-Xi/Chairman-Xi_Chapter-11.pdf?ver=2019-02-08-112005-803).

<sup>50</sup> Fact Sheet, "Arms Control and Proliferation Profile: China," Arms Control Association (July 2017), available at <https://www.armscontrol.org/factsheets/chinaprofile#nw>.

<sup>51</sup> China Power Team, "How is China Modernizing its Nuclear Force," Center for Strategic and International Studies (October 28, 2020), available at: <https://chinapower.csis.org/china-nuclear-weapons/>.

<sup>52</sup> Testimony of ADM Charles A. Richard, Commander United States Strategic Command, Before the Senate Committee on Armed Services (April 20, 2021), available at <https://www.armed-services.senate.gov/imo/media/doc/Richard04.20.2021.pdf>.

<sup>53</sup> Fact Sheet, Arms Control Association, op. cit.

have both conventional and nuclear variants. The road-mobile solid-fueled DF-21 MRBM has been in service since the 1990s, though a more modern nuclear variant was deployed in 2016.<sup>54</sup> The DF-26 road-mobile IRBM is China's first precision strike capability with both conventional and lower-yield nuclear variants capable of striking Guam.<sup>55</sup> Further, the design of the DF-26 allows operators to quickly swap between conventional and nuclear payloads in the field.<sup>56</sup> Finally, China is developing the DF-17 equipped with a hypersonic glide vehicle (HGV). The PLARF began fielding this missile in 2020<sup>57</sup> and it is thought to be capable of carrying a nuclear payload and designed with the ability to defeat regional missile defenses.<sup>58</sup>

The People's Liberation Army Navy (PLAN) operates the sea-leg of China's nuclear deterrent. It has a total of six Jin-class (Type 094) nuclear powered ballistic missile submarines (SSBNs) though only four are thought to be currently operational.<sup>59</sup> Each SSBN is believed to be

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<sup>54</sup> Missile Defense Project, "DF-21 (CSS-5)," Missile Threat, Center for Strategic and International Studies (July 31, 2021), available at <https://missilethreat.csis.org/missile/df-21/>.

<sup>55</sup> Phillip C. Saunders and David C. Logan, "China's Regional Nuclear Capability, Nonnuclear Strategic Systems, and Integration of Concepts and Operations," in *China's Strategic Arsenal: Worldview, Doctrine, and Systems* (Washington, D.C.: Georgetown University Press, 2020), pp. 192-193.

<sup>56</sup> Missile Defense Project, "DF-26," Missile Threat, Center for Strategic and International Studies (August 6, 2021), available at <https://missilethreat.csis.org/missile/dong-feng-26-df-26/>.

<sup>57</sup> Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2021*, p. VII, available at <https://media.defense.gov/2021/Nov/03/2002885874/-1/-1/0/2021-CMPR-FINAL.PDF>.

<sup>58</sup> Missile Defense Project, "DF-17," Missile Threat, Center for Strategic and International Studies (August 2, 2021), available at <https://missilethreat.csis.org/missile/df-17/>.

<sup>59</sup> Hans M. Kristensen and Matt Korda, "Nuclear Notebook: Chinese Nuclear Forces 2020," *Bulletin of the Atomic Scientists* (December 7, 2020),



equipped with up to 12 JL-2 submarine-launched ballistic missiles (SLBM). The JL-2 carries a single warhead with a limited range of 7,200-9,000 km., meaning that it is unable to target the United States from Chinese littoral waters. To successfully hold the United States at risk, the Jin needs to enter the open Pacific. However, according to the U.S. Office of Naval Intelligence the Jin is noisy, making it easily detectable and potentially vulnerable in the open Pacific.<sup>60</sup> China is developing the next generation of SSBNs, building the Type 096 which will carry the JL-3 SLBM capable of targeting the United States from Chinese littoral waters.<sup>61</sup> The improvements to these capabilities will make the sea-leg of China's nuclear deterrent more capable and survivable.

The Chinese strategic bomber force was inactive for decades until the PLA Air Force was assigned a "strategic deterrence" mission in 2012. Since then, China has updated the H-6N bomber, which is air-refuellable and cable of carrying an air-launched ballistic missile.<sup>62</sup> While the H-6N only has a range of around 3,100 km,<sup>63</sup> the addition of this capability gives the Chinese a regional nuclear triad. In addition to updating its legacy bombers, the Chinese are designing a new strategic bomber designated the H-20. While the specifications of the H-20 are still unknown to

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available at <https://thebulletin.org/premium/2020-12/nuclear-notebook-chinese-nuclear-forces-2020/>.

<sup>60</sup> Matthew P. Funaiole and Joseph S. Bermudez Jr., "A Glimpse of Chinese Ballistic Submarines," Center for Strategic and International Studies (August 4, 2021), available at <https://www.csis.org/analysis/glimpse-chinese-ballistic-missile-submarines>.

<sup>61</sup> Patty-Jane Geller and Peter Brooks, "China's Growing Nuclear Threat," The Heritage Foundation (May 3, 2021), available at <https://www.heritage.org/defense/report/chinas-growing-nuclear-threat>.

<sup>62</sup> *Ibid.*

<sup>63</sup> Hans M. Kristensen and Matt Korda, *op. cit.*

analysts, it is speculated that the H-20 will be a stealth bomber capable of deep penetration with an operational range that will enable it to target Hawaii and Alaska when operating from the Chinese mainland.<sup>64</sup>

Finally, China is dramatically increasing the size of its force. Recently, three new missile fields were discovered where China appears to be constructing as many as 360 new long-range missile silos.<sup>65</sup> Considering China possessed just two dozen missile silos previously, this is an astonishingly large expansion of force size.<sup>66</sup> Admiral Richard, Commander of U.S. Strategic Command has testified that “this is easily the biggest expansion in China’s history and rivals the biggest expansion of any nation in history, including us and the Soviet Union back in the early ‘60s.”<sup>67</sup> Further, if the Chinese were to decide to load each silo with MIRVed missiles, such as its newly fielded DF-41 capable of carrying 10 warheads, China would exceed U.S. and Russian treaty limited deployment numbers.<sup>68</sup> Defense Intelligence Agency Director, Lt. Gen. Scott Berrier testified to the Senate Armed Services Committee in April 2021 that “China probably seeks to narrow, match, or in some places

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<sup>64</sup> Mark Episkopos, “Why China’s Mysterious H-20 Bomber Could be a Real Threat,” *The National Interest* (May 26, 2021), available at <https://nationalinterest.org/blog/buzz/why-china%E2%80%99s-mysterious-stealth-h-20-bomber-could-be-real-threat-186105>.

<sup>65</sup> Admiral Richard, Testimony before the Senate Armed Services Committee (May 4, 2022), available at: <https://www.stratcom.mil/Media/Speeches/Article/3022885/senate-armed-services-committee-hearing-nuclear-weapons-council/>.

<sup>66</sup> Dean Cheng, “China’s Nuclear Forces Swell: A Tri-Polar World?” *The Heritage Foundation* (August 4, 2021), available at <https://www.heritage.org/defense/commentary/chinas-nuclear-forces-swell-tri-polar-world>.

<sup>67</sup> Admiral Richard Testimony (May 4, 2022), op. cit.

<sup>68</sup> Ibid.

exceed U.S. qualitative equivalency with new nuclear warheads and their delivery platforms.”<sup>69</sup>

While the increase in the size of the force has been staggering, the speed in which this has been accomplished is startling. In 2020, the U.S. Department of Defense estimated in its annual report to Congress that the PRC would double its force to 400 weapons by 2030. Prior to the discovery of the missile fields, Defense Intelligence Agency Director Lt. Gen. Robert P. Ashley Jr. stated, “over the next decade, China is likely to at least double the size of its nuclear stockpile in the course of implementing the most rapid expansion and diversification of its nuclear arsenal in China’s history.”<sup>70</sup> Just two years later, Admiral Richard testified that this had been completed, stating “When I first testified two years ago, the debate was whether China was going to double its stockpile by the end of the decade. That’s already happened while I’ve been the commander of U.S. Strategic Command.”<sup>71</sup> As of 2021, the Department of Defense estimates that China will increase its force size to 1,000 weapons by 2030, more than double the estimation of the previous year.<sup>72</sup>

To complement its extensive modernization and expansion of nuclear capabilities, China is also increasing the sophistication of its command and control, intelligence, surveillance, and reconnaissance architecture. A combination of space and ground-based sensors have

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<sup>69</sup> Ibid.

<sup>70</sup> Shannon Bugos, Julie Masterson, “New Chinese Missile Silo Fields Discovered,” Arms Control Association (September 2021), available at <https://www.armscontrol.org/act/2021-09/news/new-chinese-missile-silo-fields-discovered>.

<sup>71</sup> Admiral Richard Testimony (May 4, 2022), op. cit. See also Department of Defense, *Military and Security Developments Involving the People’s Republic of China, 2020*, op. cit., p. 85.

<sup>72</sup> Department of Defense, *Military and Security Developments Involving the People’s Republic of China, 2021*, op. cit., p. VIII.

improved China's missile early warning detection system, a critical component to enable China to adopt a Launch on Warning (LOW) posture.<sup>73</sup> Referred to as "early warning counterstrike" in Chinese literature, LOW would enable China to launch a nuclear response after receiving warning of an impending adversary nuclear attack. This requires a portion of China's force to be on a high alert status. Though the PLARF has been exercising LOW since 2017, this posture increases the potential for accidental or inadvertent nuclear launch if the warning data is wrong or mischaracterized.<sup>74</sup>

## **Ways China May Adapt its Nuclear Strategy**

The rapid expansion of China's nuclear force enables China to adapt its nuclear strategy beyond its traditional minimum deterrence doctrine as outlined earlier. Since China tested its first nuclear weapon, its deterrent strategy has been based on a lean and effective force capable of a secure second strike against countervalue targets. The increase in the size and flexibility of the force enables China to expand its nuclear strategy beyond this traditional posture. Will China remain dedicated to its No First Use and Sole Purpose policies? Will it maintain its countervalue strategy or transition to a counterforce strategy or a hybrid of both? The outcome of Chinese strategists' debates on China's future deterrence posture will have implications for the United States and its allies and partners. However, the

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<sup>73</sup> 2021 Report to Congress of the U.S.-China Economic and Security Review Commission (November 2021), p. 14, available at [https://www.uscc.gov/sites/default/files/2021-11/2021\\_Annual\\_Report\\_to\\_Congress.pdf](https://www.uscc.gov/sites/default/files/2021-11/2021_Annual_Report_to_Congress.pdf).

<sup>74</sup> Department of Defense, *Military and Security Developments Involving the People's Republic of China, 2021*, op. cit., p. 93.

insight the United States has into China's policy process and development is limited. This limited insight means it is prudent to make assessments on potential strategic choices and policy decisions that China may adopt in order to inform U.S. policy development. The below assessment is not all inclusive, but highlights some of the deterrence policy options China's nuclear modernization and expansion make possible.

### *Maintain Minimum Deterrence*

There is the possibility that China may maintain its current minimum deterrence nuclear strategy. China's 2019 Defense White Paper stated that it "keeps its nuclear capabilities at the minimum level required for national security,"<sup>75</sup> while the 2020 version of *The Science of Military Strategy* makes no dramatic changes to China's nuclear doctrine despite removing the self-imposed limits on the size of its nuclear arsenal.<sup>76</sup> Further, Chinese scholars contend that China's current nuclear doctrine is morally superior to that of the United States, giving it a propaganda tool in the international information environment.<sup>77</sup>

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<sup>75</sup> The People's Republic of China, *China's National Defense in a New Era*, op. cit.

<sup>76</sup> Marcus Clay and Roderick Lee, "Unmasking the Devil in the Chinese Details: A Study Note on the Science of Military Strategy 2020," China Aerospace Studies Institute, Air War College (January 2022), pp. 2-3, available at <https://www.airuniversity.af.edu/Portals/10/CASI/documents/Research/Other-Topics/2022-01-24%20SMS%202020%20in%20Perspective.pdf>.

<sup>77</sup> Xu Weidi, "China's Security Environment and the Role of Nuclear Weapons," in *Understanding Chinese Nuclear Thinking*, ed. by Li Bin, Tong Zhao (Washington, D.C.: Carnegie Endowment for International Peace, 2016), p. 38, available at [https://carnegieendowment.org/files/ChineseNuclearThinking\\_Final.pdf](https://carnegieendowment.org/files/ChineseNuclearThinking_Final.pdf).

China's deterrence policy has been remarkably consistent since it first acquired a nuclear capability. China could maintain its minimum deterrence posture characterized by a lean and effective force at a level which is sufficient to deter nuclear attacks and nuclear blackmail by maintaining a secure second-strike capability.<sup>78</sup> This deterrence posture is predicated on ambiguity to create uncertainty in the adversary as to China's nuclear strength.<sup>79</sup> Further, China would maintain both its declared No First Use policy stating it will never use nuclear weapons first, and its declared sole purpose policy affirming that the sole purpose of nuclear weapons is to deter nuclear attack.<sup>80</sup> China's deterrent policy also offers negative security assurances to non-nuclear states, stating "China will unconditionally not use or threaten to use nuclear weapons against non-nuclear-weapon states or in nuclear-weapon-free zones, and will never enter into a nuclear arms race with any other country."<sup>81</sup> Finally, China could maintain its countervalue strategy, holding at risk adversary urban areas.<sup>82</sup>

*Nuclear Force Requirements:* This strategy requires a nuclear force sufficient to deliver a secure second strike. This has typically been fulfilled by a lean and effective force of a few hundred weapons capable of surviving a first strike executing a second strike in response.

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<sup>78</sup> Eric Heginbotham and Michael S. Chase, et al., "China's Evolving Nuclear Deterrent," RAND (2017), p. 20, available at [https://www.rand.org/pubs/research\\_reports/RR1628.html](https://www.rand.org/pubs/research_reports/RR1628.html).

<sup>79</sup> *The Science of Strategy 2013*, op. cit., p. 218.

<sup>80</sup> *Ibid.*, pp. 216-217.

<sup>81</sup> People's Republic of China, "China's Military Strategy," The State Council Information Office (May 2015), p. 15, available at [http://english.www.gov.cn/archive/white\\_paper/2015/05/27/content\\_281475115610833.htm](http://english.www.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm).

<sup>82</sup> *The Science of Strategy 2013*, op. cit., p. 221.

*Assessment:* Maintaining its minimum deterrence posture may not meet China's increased security needs stemming from its ambitious strategic goals that clash with international norms and the rules based international order. Further, the dramatic increase in the size of the arsenal appears to go beyond "lean" and "effective." Additionally, some of the capabilities China is developing do not directly support this strategy, such as the DF-26. This is a precision strike, lower yield weapon which suggests a regional war fighting capability rather than a secure second-strike deterrent weapon. Finally, recent developments suggest that China's strategists are debating the efficacy of its No First Use policy and that there are scenarios where this policy may not apply, such as in response to conventional attacks on strategic targets.<sup>83</sup> However, this strategy gives China a strategic messaging tool in the information sphere, characterizing their strategy as "responsible" and "defensive" while at the same time lamenting the United States' "first-strike" nuclear strategy.<sup>84</sup> Further, China's defensive strategies do not preclude Chinese use of force. Therefore, even if China adapts its nuclear strategy privately to support a more robust nuclear posture, it may maintain its minimum deterrence strategy publicly to continue this beneficial messaging campaign.

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<sup>83</sup> For a description of the conditions for China to launch a first strike, see: Nan Li, "China's Evolving Nuclear Strategy: Will China Drop 'No First Use'?" China Brief, The Jamestown Foundation (January 12, 2018), available at <https://jamestown.org/program/chinas-evolving-nuclear-strategy-will-china-drop-no-first-use/>.

<sup>84</sup> Li Bin, "Differences between Chinese and U.S. Nuclear Thinking and their Origins," in *Understanding Chinese Nuclear Thinking*, ed. by Li Bin, Tong Zhao (Washington, D.C.: Carnegie Endowment for International Peace, 2016) op. cit., pp. 11-12.

### ***Robust Deterrence Strategy***

While China describes its minimum deterrent posture as focused on other nuclear armed powers, limited to deterring nuclear attack and defensive by adhering to a No First Use policy, a robust deterrence strategy would abandon two of those three tenets. Robust deterrence would allow China to maintain its focus on other nuclear powers while continuing to provide negative security assurances to non-nuclear weapons states. However, it would abandon China's previously held Sole Purpose and No First Use policies. This would allow China to achieve other strategic goals beyond deterring nuclear attack and coercion.

First, it would cement China's status as a great power and an equal to the United States and Russia. This is a clear ambition of Xi Jinping and fits into his plans to rejuvenate the Chinese nation by 2049.<sup>85</sup> Further, Chinese leaders may believe it would give China the ability to undermine the U.S.-led security order in East Asia, allowing Beijing to establish its own sphere of influence. Pushing the United States out of the region would allow China to stabilize its security environment, which has become much more dangerous in the last decade.

Second, by publicly abandoning Sole Purpose and No First Use policies, a robust deterrent strategy increases the risk of escalation in conventional conflict with China by injecting the possibility that China may escalate to limited nuclear use first. The relationship between conventional and nuclear deterrence is something that Chinese strategists have been concerned about for some time, writing in *The Science of Second Artillery Campaigns* in 2004 that, "The most important type of future regional wars will be conventional conflicts under conditions of nuclear deterrence, deterrence

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<sup>85</sup> "Section 2: China's Nuclear Forces: Moving beyond a minimum deterrent," *2021 Report to Congress of the U.S.-China Economic and Security Review Commission*, op. cit., p 340.



and actual war-fighting will exist at the same time, and their function and effectiveness will be mutually complementary.”<sup>86</sup> By creating the possibility of Chinese limited first use of nuclear weapons, China purposefully extends the nuclear shadow over any regional conflict.

The threat of limited nuclear first use would have two closely related benefits for China. First, such a threat, coupled with conventional forces capable of achieving their objectives quickly, would put the United States in the position of having to overturn Chinese gains, made potentially more costly by a robust and flexible Chinese nuclear deterrent. Second, if China assesses that the United States would be unwilling to risk a conflict that could escalate to the nuclear level, China would be able to achieve its regional objectives conventionally at a lower level of escalation.<sup>87</sup> While the Taiwan question is the most pressing scenario for China to deter U.S. intervention, a robust deterrent would also impact other scenarios where China perceives the United States intruding on its interests, such as the territorial disputes with Japan or the Philippines.

Finally, a robust nuclear deterrent would allow China to participate in strategic stability dialogues and arms control negotiations as an equal to both Russia and the United States. Pressure on China to join arms control negotiations from the United States has increased in recent years, though China has resisted, citing its small nuclear force in comparison to the United States or Russia.<sup>88</sup> While Russian officials have stated that further nuclear reductions will not

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<sup>86</sup> Yu Jixun, ed., *The Science of Second Artillery Campaigns* (Beijing: Press of the People’s Liberation Army, 2004) p. 275.

<sup>87</sup> Brad Roberts, *The Case for Nuclear Weapons in the 21<sup>st</sup> Century* (Stanford, California: Stanford University Press, 2016), p. 168.

<sup>88</sup> “China Challenges U.S. to Cut Nuclear Arsenal to Matching Level,” *Reuters* (July 7, 2020), available at <https://www.reuters.com/article/us-china-usa-arms/china-challenges-u-s-to-cut-nuclear-arsenal-to-matching-level-idUSKBN2490C9>.

be possible without multilateral participation, they have retreated from insisting on Chinese participation, due in large part to the growing strategic partnership between the two nations.<sup>89</sup> The development of a robust nuclear deterrent would fundamentally alter the international environment for arms control negotiations. Not only would it allow China to lead in the negotiations, the growing partnership with Russia would give it a negotiating advantage over the United States. Chinese strategists have viewed U.S. arms control efforts as attempts to “constrain Chinese capabilities, lock in an advantage and win a military competition,” in large part because the United States is negotiating from a superior position.<sup>90</sup> With a negotiating advantage, China may view arms control negotiations as a way to constrain the United States and cement its own military advantage.

*Required Nuclear Forces:* A robust nuclear strategy requires a force capable of deterring an overwhelming nuclear response, should China choose to threaten or conduct limited nuclear strikes in a regional conflict. This would include a viable nuclear triad capable of delivering a secure second-strike as well as delivery systems able to conduct regional strikes with lower-yield warheads. Second, in order to achieve the political objectives of this strategy of being viewed as a great power equal to the United States and being able to use arms control to its advantage, China would require, at minimum, qualitative parity with the United States. The current modernization trajectory that China is on provides such a force with a survivable nuclear triad, diversified delivery systems with

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<sup>89</sup> Steven Pifer, “Russia’s shifting views of multilateral nuclear arms control with China,” The Brookings Institution (February 19, 2020), available at <https://www.brookings.edu/blog/order-from-chaos/2020/02/19/russias-shifting-views-of-multilateral-nuclear-arms-control-with-china/>.

<sup>90</sup> Hiim and Troan, *op. cit.*, p. 92.

warheads of various yields including lower yield weapons, precision strike capabilities, and advancements in command and control, which provide China the flexibility necessary to achieve a robust nuclear deterrent.

*Assessment:* China believes the Taiwan issue is an existential threat to the Chinese Communist Party. This is an issue on which it cannot compromise or make concessions.<sup>91</sup> This has been a consistent message through each successive generation of Chinese leadership, with Xi Jinping regularly affirming that Taiwan will be unified with the “motherland.” As the primary guarantor of the status quo on Taiwan, the United States is viewed by China as the main impediment to Chinese unification ambitions, enabling this existential threat to the Chinese Communist Party to continue. Further, as U.S. allies such as Australia and Japan, or multi-national groups such as the Quad, commit to maintaining the status quo in the Pacific, China’s ability to achieve its regional and global ambitions will be challenged. In China’s view, the commitment to maintaining the status quo by the United States and its allies will cause China’s security environment to deteriorate.

However, a robust deterrent may reverse this trend. In early 2022, the Russian invasion of Ukraine was accompanied by exercises of Russian nuclear forces and nuclear saber rattling by President Putin.<sup>92</sup> The Biden administration made it clear on several occasions that it would not send forces to support Ukraine and risk a conflict with another nuclear power, with President Biden stating,

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<sup>91</sup> Keith B. Payne, “The Taiwan Question: How to Think About Deterrence Now,” *Information Series* No. 509 (Fairfax, VA: National Institute Press, November 15, 2021), available at <https://nipp.org/wp-content/uploads/2021/11/IS-509.pdf>.

<sup>92</sup> Tom Balmforth, Maria Kiselyova, “Putin Leads Sweeping Nuclear Exercises as Tensions Soar,” *Reuters* (February 19, 2022), available at <https://www.reuters.com/world/europe/putin-starts-russias-strategic-nuclear-exercises-tensions-soar-2022-02-19/>.

"We will not fight a war against Russia in Ukraine. Direct conflict between NATO and Russia is World War III, something we must strive to prevent."<sup>93</sup> While it can be debated if defending Ukraine is in the national interest of the United States, and it is clear that U.S. interests in and obligations to Taiwan are different than in Ukraine, what cannot be denied is that China may be learning the lesson that the United States does not risk conflict with a nation that has a nuclear force equal to its own.<sup>94</sup> A robust deterrent strategy may give China greater ability to solve its Taiwan problem at a lower level of escalation, removing an existential threat to the Chinese Communist Party.

Such a posture would remove China's Sole Purpose and No First Use policies, which China has used in the international arena to garner a positive image as a responsible nuclear power. While this would be a blow to its image, the Chinese government may be able to mitigate the negative consequences by deflecting blame to the United States, stating that the U.S. refusal to adopt a similar policy is the driving force behind the change in Chinese strategy. Further, taking the lead in strategic stability dialogues and arms control negotiations would not only help repair China's image as a responsible nuclear power, but it would also burnish China's image as a great power on par with the United States and Russia.

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<sup>93</sup> Brett Samuels, "Biden: Direct conflict between NATO and Russia would be 'World War III,'" *The Hill* (March 11, 2022), available at <https://thehill.com/policy/international/597842-biden-direct-conflict-between-nato-and-russia-would-be-world-war-iii/>.

<sup>94</sup> David Sacks, "What is China Learning from Russia's War in Ukraine?," *Foreign Affairs* (May 16, 2022), available at <https://www.foreignaffairs.com/articles/china/2022-05-16/what-china-learning-russias-war-ukraine>.

### *Nuclear Coercion*

Deterrence and coercion are often used interchangeably, as they are both used to influence an actor's decision making. However, for the purposes of this discussion, coercion is defined as convincing an actor to take an action they otherwise would not take—the opposite of deterrence, which is intended to prevent an actor from taking an action they otherwise might. Like a robust deterrence strategy, a nuclear coercion strategy would also abandon China's traditional Sole Purpose and No First Use policies. This would provide the same benefits as the robust deterrent strategy, e.g., increased status in the international system and deterring intervention in Chinese "internal" affairs, allowing China to achieve its objectives at a lower level of escalation. However, unlike the robust deterrence strategy, a nuclear coercion policy would not only be focused on nuclear armed powers but would widen the aperture to non-nuclear states as well. This would allow China to achieve its political ambitions by using its nuclear capabilities to coerce nations, especially regional nations, to acquiesce to Chinese desires.

*Required Nuclear Forces:* In addition to the qualitative parity necessary for the robust deterrence strategy, China would need to continue to invest in regional, precision strike, lower yield nuclear capabilities such as the DF-26 ballistic missile. This would provide China the capability to make overt threats against regional nations, while the precision and lower yield of the warhead would make the threat more credible by limiting societal damage.<sup>95</sup>

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<sup>95</sup> Christopher Yeaw, *The Escalatory Attraction of Limited Nuclear Employment for Great Power Competitors of the United States*, National Strategic Research Institute (October 26, 2021), available at <https://nsri.nebraska.edu/-/media/projects/nsri/docs/academic-publications/2021/october/escalatory-attraction-of-limited-nuclear-employment.pdf>.

*Assessment:* Western strategists clearly differentiate between deterrence and coercion, with deterrence defined as the prevention of unwanted action and coercion defined as compelling an action. The United States has clearly outlined the roles for nuclear weapons in successive Nuclear Posture Reviews (NPRs), and while deterring nuclear attack on U.S. vital interests is a primary role for the nuclear force, coercing adversaries does not make the list.<sup>96</sup> Western strategists tend to view nuclear coercion as anathema, and from that cultural lens assume Chinese strategists view it similarly. However, Chinese deterrence theory is markedly different from Western deterrence theory, most notably in how it conceptualizes coercion. For China, the term *weishu* is most often defined as deterrence, but in Chinese definitions it includes elements of both deterrence and coercion.<sup>97</sup> Even in Chinese military books that define terminology it states “that there are offensive deterrence strategies and defensive deterrence strategies, which would seem to represent coercive and dissuasive approaches, respectively.”<sup>98</sup> This suggests that the Chinese pursuit of a nuclear coercion deterrence strategy should not be dismissed out of hand.

Further, there is ample evidence of China using other elements of national power to coerce states in order to achieve its political objectives. China has used economic coercion against a multitude of states to force states to accede to Chinese political desires. While this has been done with varying degrees of success, and has inspired

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<sup>96</sup> Department of Defense, *Nuclear Posture Review, 2018*, available at <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>.

<sup>97</sup> Dean Chang, “Evolving Chinese Thinking About Deterrence: The Nuclear Dimension,” The Heritage Foundation (August 16, 2017), available at <https://www.heritage.org/asia/report/evolving-chinese-thinking-about-deterrence-the-nuclear-dimension>.

<sup>98</sup> *Ibid.*

international calls to resist Chinese economic coercion, it has demonstrated Chinese willingness to use coercion to achieve its political ends.<sup>99</sup> Nuclear coercion is markedly different than economic coercion, and a willingness to coerce economically does not necessarily equate to a willingness to use nuclear coercion. However, in July 2021 after the release of Japan's Defense White Paper stating that Taiwan is a strategic interest of Japan, "a municipal Chinese government authority...repost[ed] on social media a video threatening Japan with nuclear war."<sup>100</sup> This would suggest that nuclear coercion is not verboten in Chinese strategy.

## **Implications for the United States and Allies**

China's nuclear modernization, when viewed in the context of its strategic ambitions and more dangerous security environment, poses a serious challenge for the United States and its allies. Xi Jinping has made clear that unification with Taiwan is a necessity, most recently during a speech in October 2021, stating, "The historical task of the complete reunification of the motherland must be fulfilled, and will definitely be fulfilled."<sup>101</sup> Further, Chinese leaders have made clear that this is an issue on which they are unwilling to compromise. According to a spokesman from the Chinese Ministry of Foreign Affairs, "When it comes to

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<sup>99</sup> Bonnie S. Glasser, "Time for Collective Pushback against China's Economic Coercion," Center for Strategic and International Studies (January 13, 2021), available at <https://www.csis.org/analysis/time-collective-pushback-against-chinas-economic-coercion>.

<sup>100</sup> *2021 Report to Congress of the U.S.-China Economic and Security Review Commission*, op. cit., p. 3720.

<sup>101</sup> Vincent Ni, "Xi Jinping vows to fulfill Taiwan 'reunification' with China by peaceful means," *The Guardian* (October 9, 2021), available at <https://www.theguardian.com/world/2021/oct/09/xi-jinping-vows-taiwans-reunification-with-china-will-be-fulfilled/>.

issues related to China's sovereignty and territorial integrity and other core interests, there is no room for China to compromise or make concessions. Taiwan is an inalienable part of China's territory. The Taiwan issue is purely an internal affair of China that allows no foreign intervention."<sup>102</sup>

It is clear that China is building a nuclear force commensurate with achieving the goals of establishing a sphere of influence and dominance over regional neighbors while guarding against the increased danger its leaders perceive in the security environment. What is not clear, is how China will adapt its deterrent strategy to achieve its goals and confront this threat. There are a multitude of possibilities that the increased size and sophistication of its nuclear force make possible. Further, even if China remains committed to its minimum deterrent strategy, its nuclear development means it will be able to make changes to its nuclear doctrine if its security environment deteriorates, such as in a crisis. The nuclear force China is building increases the options it has at its disposal to both deter and coerce its adversaries and neighbors.

A key feature of the security architecture in East Asia, is the extended deterrence guarantees the United States has made to Australia, Japan and South Korea. These guarantees seek to deter adversary attacks, while also curbing proliferation by convincing these allies that their own nuclear deterrent is unnecessary. China's nuclear modernization has proceeded hand in hand with its conventional military modernization, steadily changing the balance of power in the region and giving it an advantage

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<sup>102</sup> "China Vows No Concession on Taiwan After Biden's Comments," *AP News* (October 22, 2021), available at <https://apnews.com/article/joe-biden-china-beijing-taiwan-f4fdeb6e15097d55f5d4c06b5f8c9c29>.



within the first island chain.<sup>103</sup> This will increasingly challenge the credibility of U.S. extended deterrence guarantees made to regional allies. According to Abraham Denmark, former Deputy Assistant Secretary of Defense for East Asia, “A deeper nuclear stalemate between the United States and China is likely to accelerate this nascent interest in autonomous nuclear capabilities if allies come to believe that the U.S. security umbrella is becoming less reliable against not only nuclear but also conventional threats.”<sup>104</sup>

Further, as China continues to develop unique capabilities, such as lower yield precision strike nuclear weapons, the United States may be challenged to deter their use. According to Dr. Christopher Yeaw, Director of Strategic Deterrence and Nuclear Programs at the National Strategic Research Institute, “It is a virtual truism of competition that challengers will invariably focus on areas of competition in which an otherwise dominant party may be weak.”<sup>105</sup> The 2018 *Nuclear Posture Review* sought to bridge this gap by developing a nuclear sea-launched cruise missile (SLCM-N) to provide the United States with the flexibility to respond proportionately to limited nuclear threats in order to increase the credibility of its deterrent.<sup>106</sup> However, the Biden administration sought to cancel the program in its 2023 budget request. While the fate of the

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<sup>103</sup> Phillip C. Saunders and Kevin McGuiness, “The Changing Balance of Military Power In the Indo-Pacific Region,” The Hoover Institution (May 26, 2021), available at <https://www.hoover.org/research/changing-balance-military-power-indo-pacific-region>.

<sup>104</sup> Abraham Denmark and Caitlin Talmadge, “Why China Wants More and Better Nukes,” *Foreign Affairs* (November 19, 2021), available at <https://www.foreignaffairs.com/articles/china/2021-11-19/why-china-wants-more-and-better-nukes>.

<sup>105</sup> Yeaw, op. cit., p. 3.

<sup>106</sup> *Nuclear Posture Review 2018*, op. cit., p. 55.

SLCM-N is still under debate in Congress,<sup>107</sup> Admiral Richard, Commander of U.S. Strategic Command warns “We are facing a crisis deterrence dynamic right now that we have only seen a few times in our nation’s history...China’s nuclear trajectory – their strategic breakout – demonstrates that we have a deterrence and assurance gap based on the threat of limited nuclear employment.”<sup>108</sup>

As China’s nuclear arsenal expands, the world ventures into unknown territory. Never before has the United States faced two nuclear peers simultaneously. During the Cold War, China was the lesser included adversary in the bilateral deterrent relationship between the United States and the Soviet Union, but China’s nuclear development is changing the bilateral nuclear deterrence relationship.<sup>109</sup> While it is tempting to analyze the relationships between the United States and Russia and the United States and China in isolation from each other, they are interrelated and are in fact a Deterrence Triangle. As Therese Delpech noted, “triangles may make a situation more unstable and difficult to control as they introduce more variables into the algebra of deterrence.”<sup>110</sup> This requires a reinvigoration of study

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<sup>107</sup> Valerie Insinna, “House authorizers approve \$45M to keep sea-launched nuke on life support,” *Breaking Defense* (June 22, 2022), available at <https://breakingdefense.com/2022/06/house-authorizers-approve-45m-to-keep-sea-launched-nuke-on-life-support/>.

<sup>108</sup> Admiral Richard Testimony (May 4, 2022), op. cit.

<sup>109</sup> Andrew F. Krepinevich, Jr., “The New Nuclear Age: How China’s Growing Nuclear Arsenal Threatens Deterrence,” *Foreign Affairs* (May/June 2022), available at <https://www.foreignaffairs.com/articles/china/2022-04-19/new-nuclear-age>.

<sup>110</sup> Therese Delpech, “Nuclear Deterrence in the 21<sup>st</sup> Century,” (Santa Monica, CA: RAND, 2012), p. 39, available at [https://www.rand.org/content/dam/rand/pubs/monographs/2012/RAND\\_MG1103.pdf](https://www.rand.org/content/dam/rand/pubs/monographs/2012/RAND_MG1103.pdf).

into deterrence strategy and a reexamination of U.S. policy, plans, strategy and force structure.

Finally, China's refusal to develop anything resembling a robust crisis communication mechanism with the United States means that a small incident has the potential to escalate due to an inability to communicate and potential misunderstanding.<sup>111</sup> If the increase in the size of China's nuclear arsenal means that China is more willing to participate in arms control negotiations, this may benefit the building of crisis communication mechanisms. However, there are cultural factors that should temper optimism regarding either prospect. First, as Abraham Denmark notes, "the way [Chinese leaders] make decisions, the way they share information, does not lend itself well to those sorts of communications."<sup>112</sup> Second, Chinese strategic culture has a distinct preference for secrecy and deception. Sun Tzu, one of the most influential Chinese strategists, stated, "All warfare is based on deception."<sup>113</sup> Arms control, in order to be successful, requires a verification regime to ensure that treaty signatories are meeting their obligations. This requires a level of transparency that culturally, Chinese leaders may resist or to which they may not adhere.

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<sup>111</sup> Rush Doshi, "Improving Risk Reduction and Crisis Management in US-China Relations," The Brookings Institution (November 2020), p. 2, available at <https://www.brookings.edu/wp-content/uploads/2020/11/Rush-Doshi.pdf>.

<sup>112</sup> "Section 2: China's Nuclear Forces: Moving beyond a minimum deterrent," The U.S.-China Economic and Security Commission, op. cit., p. 372.

<sup>113</sup> Sun Tzu, *The Illustrated Art of War*, trans. Samuel B. Griffith (Oxford, UK: Oxford University Press, 2005), p. 96.

## Conclusion

Admiral Richard described the scale of China's nuclear modernization program as "breathtaking," but what is truly breathtaking are the implications such developments will have not only on the region, but on the global international order. China's nuclear advancements have created a shock in the international system that is uncertain and not well understood. Nor can it be fully understood as long as China remains opaque with regard to its nuclear expansion and doctrine. This requires the United States and its allies to examine the breadth of possibilities to better understand the threat and potential consequences in order to make prudent policy and strategy choices.

China's desire to change the status quo in East Asia, coupled with the advances it has made in both nuclear and conventional capabilities, provides China numerous options when contemplating its future security strategy. Coupled with the peer deterrent relationship with Russia, this will challenge U.S. deterrence strategy in unknown ways. While it may be comforting to fall back on the tenets of Cold War deterrence theory, which promised the safe and reliable functioning of deterrence based on a deliberate policy of mutual vulnerability to nuclear annihilation, it was most likely a promise that should not have been made.<sup>114</sup> As Keith Payne has noted, "Predictable deterrent effect would require a world that neither exists nor appears to be taking shape."<sup>115</sup>

Though the Biden Administration's unclassified *Nuclear Posture Review* has not yet been published, the Fact Sheet

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<sup>114</sup> Keith Payne, "Multilateral Deterrence: What's New and Why it Matters," *Information Series* No. 522 (Fairfax, VA: National Institute Press, May 16, 2022), available at: <https://nipp.org/wp-content/uploads/2022/05/IS-522.pdf>.

<sup>115</sup> Keith Payne, *The Great American Gamble* (Fairfax, VA: National Institute Press, 2008), p. 290.

released contains the familiar phrases of “reduce the role of nuclear weapons,” “leader in arms control,” and “emphasize strategic stability.”<sup>116</sup> If examining China’s nuclear modernization and doctrine has revealed anything, it is that it is necessary to challenge the conventional thinking on how to confront this new security threat. The United States and its allies depend upon nuclear weapons to deter strategic attack, Russia and China have no interest in entering into arms control negotiations, and the meaning of “strategic stability” is “increasingly unclear.”<sup>117</sup> The United States must be clear eyed on the value our adversaries place on their nuclear capabilities while also examining how they may use these capabilities to achieve their political objectives. The uncertainty created by China’s nuclear expansion, coupled with the continued need to deter Russia and assure allies, means the U.S. needs to reexamine its nuclear deterrent strategy and the forces necessary to achieve it.

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<sup>116</sup> Department of Defense, *Fact Sheet: 2022 Nuclear Posture Review and Missile Defense Review* (March 29, 2022), available at <https://media.defense.gov/2022/Mar/29/2002965339/-1/-1/1/FACT-SHEET-2022-NUCLEAR-POSTURE-REVIEW-AND-MISSILE-DEFENSE-REVIEW.PDF>.

<sup>117</sup> Therese Delpech, *op. cit.*, p. 37.

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