# China's Evolving Nuclear Strategy and its Consistency with the Chinese Leadership's Perception of Minimum Deterrence

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China is one of the recognized nuclear weapons states since it first tested its nuclear capability in 1964. Amongst major ingredients of its evolving nuclear strategy, China has been consistent with its small number of deterrent forces, an official no-first use doctrinal option, and policy of assured retaliation. This article argues that although China modernizes some parts of its key deterrent capability to enhance the credibility of its force precision, ranges and penetrability, this may not be considered a dramatic transformation in Chinese nuclear strategy. Modernization, which enhances the credibility and survivability of China's deterrence forces, is an essential part of minimum deterrence conceptualized here. However, the possible greater transformation within doctrinal option of no-first use, increase of its deterrent forces including that of tactical nuclear weapons, and rescinding its strategy of assured retaliation would become inconsistent with what is conceptualized here.

**Keywords:** China's nuclear strategy, the minimum means of reprisal, nofirst use, essentials of minimum, Chinese strategic force modernization, Chinese conceptualization of minimum deterrence

# Introduction

China became one of the five major and recognized nuclear weapons states after it successfully tested a nuclear device in 1964. The Chinese leadership developed a strong confidence in the small number of Chinese nuclear weapons. It is notable how China remained consistent in their adherence to the essentials of minimum deterrence that it conceptualized in the early days of its nuclear weapons development and how the Chinese founding leadership at the time of its nuclear

weapons acquisition shaped Chinese nuclear policy architecture in the years to come. China followed a minimalist approach toward nuclear weapons in terms of sustaining a small number of strategic forces — that is, it believed that its few nuclear weapons could deter potential adversaries no matter how large the nuclear arsenal of its adversary. China also maintained the nuclear policy of no-first-use (NFU) since its first nuclear weapons tests. Currently, it sustains the similar policy stance and encourages other nuclear weapons states to follow suit. However, the small number of China's nuclear weapons and its nuclear doctrine of NFU made Chinese nuclear weapons vulnerable to attack for at least three decades. Yet China's minimal deterrence capability was still sufficient to survive the threatening security environment of the Cold War period, in which both the U.S. and the Soviet Union acquired thousands of nuclear weapons with the capacity of destroying each other many times over. China faced the threat of losing a nuclear war of attrition, but ultimately China pursued different goals from its two Cold War adversaries. Even with the latest increase in the Chinese arsenal, it will still be insignificant compared to the U.S. and Russia, whose nuclear deterrent forces still comprise more than 90% of the total world deterrent forces,<sup>1</sup> though both of these rivals have committed themselves to decrease their deterrent forces to 1550 in accordance with the provisions of the NEW START in 2010.<sup>2</sup>

China sustained its traditional minimalist nuclear strategy by not creating a significant shift within their nuclear policy, though China has modernized its conventional and maritime forces to meet rising traditional and non-traditional security threats. However, China's

For a proportional increase of Chinese nuclear forces, see Hans M. Kristensen and Robert S. Norris, "Chinese Nuclear Forces, 2015," *Bulletin of Atomic Scientists* (July 1, 2015), <a href="http://thebulletin.org/2015/july/chinese-nuclear-forces-2015">http://thebulletin.org/2015/july/chinese-nuclear-forces-2015</a> 8459>; For the U.S. and Russian forces, see Hans M. Kristensen and Robert S. Norris, "Status of World Nuclear Forces," *Federation of American Scientists* (2016), <a href="http://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/">http://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/></a>.

<sup>2.</sup> U.S. Department of State: Diplomacy in Action "New Start," (April 2010), <http://www.state.gov/t/avc/newstart/c44126.htm>.

conventional and maritime force modernizations remain limited to only the South and East China Seas without challenging the predominance of the U.S. For China, these changes appear to be defensive rather than offensive in nature, aiming to protect China's core economic and strategic interests in these regions. In the essential parameters of nuclear strategy, China's remains consistent with what was conceptualized by its leadership. This article explains how there are no fundamental shifts in its nuclear domain.

China pursued a goal for acquiring small numbers of atomic weaponry, adopting the NFU doctrine, and pursuing assured retaliation; China would not retaliate unless it is attacked with nuclear weapons first. This entails several factors: a) deployment of the minimum number of strategic forces needed to deter attack, (though the parameters for which may be difficult to define); b) minimum deterrence under the doctrine of NFU, which worked in past Chinese deterrence of both the U.S. and the Soviet Union during the Cold War; and c) preventing a vicious arms race in the Asian region, sustaining regional stability, and wielding influence over regional nuclear weapons states. For example, Pakistan follows a policy of credible minimum deterrence, though retains the option for first use due to the widening conventional disparity between India and Pakistan. Its rival, India, has a policy of credible minimum deterrence and maintains doctrine of NFU, even if certain policy provisions have changed since the nuclear policy reorientation in 2003. Also, North Korea, although not a recognized nuclear weapons state, may still follow China's lead in following minimum deterrence and using its deterrence forces for defensive rather than offensive purposes.<sup>3</sup>

However, Chinese nuclear doctrine and nuclear force composition needs to react to American behaviors in the nuclear domain. The economic and strategic rise of China is still considered a threat for the United States. China's small nuclear forces face the challenge of a

Zafar Khan, "North Korea's Evolving Nuclear Strategy under the Pretext of Minimum Deterrence: Implications for the Korean Peninsula," *International Journal of Korean Unification Studies* 24, no. 3 (December 2015), pp. 181-216.

modern American conventional force that possesses the capacity to strike and possibly destroy deeply-buried hardened targets; American deployment of ballistic missile defense (BMD) systems both in Europe and Asia since it withdrawal from the Anti-Ballistic Missile (ABM) treaty in 2002; and the U.S. nuclear posture review (NPR) of late 2001 which clearly detailed American contingency plans to use nuclear weapons against seven countries, including Russia and China, in turn increasing the possibility of a potential military conflict between the U.S. and China across the Taiwan Strait.<sup>4</sup> Although the NPR 2010 attempts to avoid aggressive language vis-à-vis China and the U.S. overreliance on nuclear weapons, the possibility of the U.S.-China conflict both in the South and East China Seas cannot be completely ignored. Accordingly, China is modernizing its naval forces to meet these maritime challenges without necessarily introducing major shifts to the nuclear strategy articulated by its leadership. China's evolving nuclear strategy is formally articulated in their 2015 White Paper.<sup>5</sup>

Given worldwide levels of uncertainty, China could likely appear in America's next strategic outlook by way of its nuclear posture review policy document.<sup>6</sup> Current literature shows that China seeks to legitimize its geopolitical rise in the Asia-Pacific region by laying out a strategy of "anti-access/area denial (A2/AD),"<sup>7</sup> in answer to

<sup>4.</sup> Jing-dong Yuan, "Effective, Reliable, and Credible" *Nonproliferation Review* 14, no. 2 (2007), pp. 275-301.

<sup>5.</sup> Ministry of National Defense of the People's Republic of China, *China's Military Strategy* (May 26, 2015), http://eng.mod.gov.cn/DefenseNews/2015-05/26/ content\_4586748.htm.

<sup>6.</sup> This refers to the next U.S. Nuclear Posture Review (NPR) that the U.S. State Department has yet to publish which the author presumes would largely focus on the role of the U.S. nuclear deterrence and its extended deterrence in regard to the Asia-Pacific region and challenging maritime affairs. China could be the potential focus of the U.S. in the upcoming U.S. NPR policy document.

<sup>7.</sup> For an interesting analysis on this perspective see, Sumathy Permal, "China's Military Capability and Anti-access Area-denial Operations," *Maritime Affairs: Journal of the National Maritime Foundation of India* 10, no. 2 (2014), pp. 16-32; Oriana Skylar Mastro, "Why Chinese Assertiveness is Here to Stay,"

American strategic rebalancing, its so-called "pivot to Asia."<sup>8</sup> China will demonstrate its presence and potentially demonstrate its capacity for power projection in a contemporary strategic development that would have crucial implications for China's policy of minimum deterrence and NFU doctrine. Will China shift away from its earlier conceptions of nuclear security or modernize its naval forces to face the rising security challenges arrayed against it? Moreover, although India is not currently a major factor in China's grand nuclear strategy, any Chinese shifts in nuclear policy would certainly impact India. Given the extra-regional link factor in which the actions of each nuclear rival state directly impact those of other nuclear states, China may become a major factor in India's own overall strategic nuclear decision-making.<sup>9</sup>

This article examines China's evolving nuclear strategy from the perspective of maintaining minimal deterrence. This covers the three fundamental imperatives of China's nuclear strategy: the Chinese perception of minimum deterrence, its doctrine of NFU, and its capability for assured retaliation stemming from the gradual modernization of its strategic forces. It then attempts to determine whether Chinese modernization, which holds tremendous potential for it, would transform these three essential domains of Chinese strategic deterrence. Previous works on China's deterrent forces researched various

*The Washington Quarterly* 37, no. 4 (2015), pp. 151-170; Yong Deng, "China: The Post-Responsible Power," *The Washington Quarterly* 37, no. 4 (2015), pp. 117-132; M. Taylor Fravel and Christopher P. Twomey, "Projecting Strategy: The Myth of Chinese Counter-intervention," *The Washington Quarterly* 37, no. 4 (2015), pp. 171-187.

For more recent analysis on this see, Zhengyu Wu, "The Crowe Memorandum, the Rebalance to Asia, and Sino-U.S. Relations," *Journal of Strategic Studies* (2016), pp. 1-28; Stephen Burgess, "The U.S. Pivot to Asia and Renewal of the U.S.-India Strategic Partnership," *Comparative Strategy* 34, no. 4 (2015), pp. 367-379; Matto Dian, "The Pivot to Asia, Air-Sea Battle and Contested Commons in the Asia Pacific Region," *The Pacific Review* 28, no. 2 (2015), pp. 237-257.

Zafar Khan, "India's Grand Nuclear Strategy: A Road toward Deployment of Ballistic Missile Defense System," *Regional Studies XXXIV*, no. 1 (Winter, 2016), pp. 48-64.

key aspects of Chinese nuclear policy ranging from the minimum means of reprisal to Chinese force modernization. Whilst acknowledging these studies within the existing literature, the evolving Chinese nuclear strategy and its foundation minimum deterrence is not covered substantially. Utilizing previous key research on China, this article specifically discusses the aspects of China's nuclear strategy broadly articulated by Chinese leadership. To understand China's evolving nuclear strategy, we need to go back to the essential elements of minimum deterrence asserted by Chinese leadership<sup>10</sup> in order to closely examine their traditional stance towards a doctrine of NFU; a strategy of maintaining a limited amount of atomic weaponry with some modifications from force modernization; and its faith that an effective, reliable, and credible retaliation force will prevent future attack. This article concludes that if China keeps intact these three essential pillars of its nuclear strategy, it would fall within the spirit of minimum deterrence. However, possible overarching transformations in the no-first-use doctrine; increases of its deterrent forces and inclusion of tactical nuclear weapons; and rescinding its strategy of assured retaliation would become inconsistent the Chinese leadership's expressed political aims. The article begins with the historical Chinese conceptualization of minimum deterrence and its related links with other potential nuclear policy options.

# China's Pursuit of "Small Numbers": Debating Minimum and Limited Deterrence

To understand China's pursuit of limited deterrent forces and at the same time its consistent strides to modernize them, it is important to contextualize China's evolving nuclear strategy by distinguishing between the concepts of limited and minimum deterrence. Chinese

For interesting and detailed account on the essentials of minimum deterrence, see Rajesh Basrur, *Minimum Deterrence and India's Nuclear Security* (California: Stanford University Press, 2006); Also, see Zafar Khan, *Pakistan's Nuclear Policy:* A Minimum Credible Deterrence (London: Routledge, 2015).

strategists conceived of the concept of limited deterrence in the 1980's, though there is no distinct official proclamation about the limited deterrence concept and implementation. Unlike the concept of minimum deterrence, with "minimum" remaining something of an ambiguous concept, limited deterrence requires sufficient counterforce and counter-value tactical, theater, and strategic nuclear forces to deter the escalation of conventional or nuclear war. If deterrence fails, this capability should be sufficient to control escalation and to compel the enemy to back down."11 This may be deemed a restricted version of mutually assured destruction that demands deterrence forces sufficiency to cover all essential areas of force structure.<sup>12</sup> However, effectively operationalizing this deterrence concept may require the deployment of a ballistic missile defense system and effective space-based early warning capabilities.<sup>13</sup> Although China has not yet officially declared its departure from the earlier conceptions of minimum deterrence to limited deterrence and/or any other deterrence options detailed largely in Western literature, contemporary scholarship needs to carefully analyze the changing strategic environment that would be perceived by leadership as influencing China's broader strategic posture. However, China's force modernization efforts to ensure the survivability, reliability and credibility of its deterrence forces will remain an essential part of the concept of minimum deterrence.

On the other hand, minimum deterrence apparently demands a small and modest number — that is, "the mere possession of a few weapons suffices to deter."<sup>14</sup> Although the word minimum is not threatening, it remains difficult and complex to set a fixed criterion for what, precisely, the minimum may stand for. The term minimum is an unwieldy one, difficult to define exactly with reference to the concept of deterrence. The possible and simple answer we could

<sup>11.</sup> Alastair Iain Johnston, "China's New Old Thinking: The Concept of Limited Deterrence," *International Security* 20 (Winter 1995/96), p. 1.

<sup>12.</sup> Basrur, Minimum Deterrence and India's Nuclear Security, pp. 26-27.

Johnston, "China's New Old Thinking: The Concept of Limited Deterrence," p. 20.

<sup>14.</sup> Basrur, Minimum Deterrence and India's Nuclear Security, p. 27.

expect from the existing literature on minimum deterrence is that 1) "minimum" is not a static term; 2) it is flexible and changes in the strategic environment; 3) although the number could be small, it cannot be articulated exactly how small; and 4) slight modification of deterrence forces, various types of missile testing for deterrence signaling purposes, and upgrading minimum deterrent force with contemporary technological advances without necessarily making it overly sophisticated may remain consistent with the essentials of minimum deterrence described in this article. These innovative measures are linked one way or the other to the credibility and survivability of deterrence, the fundamentals of minimum deterrence.<sup>15</sup>

The possible adaptation of limited deterrence is hinted at by Chinese strategists presenting an image that contrasts with the minimum deterrence normally practiced by China and articulated by Chinese leadership in the context of a gradual modernization of strategic forces (itself solely within the realm of minimal deterrence). This is also depicted in China's latest White Paper that discusses the military modernization efforts, but at the same time does not mention a departure from minimum deterrence to limited deterrence. The principal stance of the 2015 China's White Paper on China's nuclear strategy is that, "China has always pursued the policy of no-first-use of nuclear weapons and adhered to a self-defensive nuclear strategy that is defensive in nature. China will unconditionally not use or threaten to use nuclear weapons against non-nuclear-weapon states or in nuclearweapon-free zones, and will never enter into a nuclear arms race with any other country. China has always kept its nuclear capabilities at the minimum level required for maintaining its national security (emphasis added)."16

<sup>15.</sup> For the difference between the minimum deterrence and minimum credible deterrence, see Zafar Khan, "Pakistan's Minimum Deterrence and its Policy Approach towards Fissile Materials: Security Concerns and the Region's Changed Strategic Environment," *The Korea Journal of Defense Analysis* 25, no. 4 (December 2013), pp. 51-64; Zafar Khan, "Emerging Shifts in India's Nuclear Policy: Implications for Minimum Deterrence in South Asia," *Strategic Studies* 34, no. 1 (Spring 2014), pp. 94-112.

This reflects China's consistent policy stance on minimum deterrence and the doctrinal of no-first-use negates what is largely perceived in the West and is what the Chinese strategists conceptualized in the 1980s.<sup>17</sup> The self-defensive nuclear strategy as depicted in the latest Chinese White Paper demonstrates Chinese limited intentions to go beyond the region, remaining with the South and East China Seas where China claims sovereign legitimacy. If Chinese forces modernize and intend to remain limited to these areas without directly challenging the U.S. to push away from the Asia-Pacific region, then this could support a Chinese self-defense strategy of only protecting its core interests.<sup>18</sup> With a gradual yet limited force modernization, China is indeed a rising great power, but not a superpower as the U.S. currently is. China must pass through many stages before it can reach the predominant position enjoyed by the U.S., but until then the U.S. has the potential to adjust its strategy vis-à-vis the ascent of China.<sup>19</sup> Therefore, China's defensive force strategy and limited designs to protect its core strategic interests are in turn consistent with

See China's Official White Paper on China's Military Strategy, The State Council Information Office of the People's Republic of China (May 2015), http://www.chinadaily.com.cn/china/2015-05/26/content\_20820628.htm (accessed June 25, 2015).

<sup>17.</sup> For key readings on the conceptualization of limited deterrence proposed by the Chinese strategists see, Zhang Jianzhi, "Dud caijun jiben lilun wenti de tantao" (Preliminary investigation of questions concerning the basic theory of disarmament), in Guoji caijun douzheng yu Zhongguo (China and international disarmament struggle) (Beijing: Current Affairs Press, 1987); Peng Guangqian and Wang Guangxu, Junshi zhanlue jianlun (A brief discussion of military strategy) (Beijing: Peoples Liberation Army Press, 1989); Liu Zhenwu and Meng Shaoying, Xiandai jundui zhihui (The command of modern military forces) (Beijing: NDU Press, 1993).

For an excellent analysis on this, see Charles L. Glaser, "A U.S.-China Grand Bargain? The Hard Choice between Military Competition and Accommodation," *International Security* 39, no. 4 (Spring 2015), pp. 49-90.

For a recent robust analysis on this perspective, see Stephen G. Brooks and William C. Wohlforth, "The Rise and Fall of the Great Powers in the Twenty-First Century: China's Rise and the Fate of America's Global Position," *International Security* 40, no. 3 (Winter 2015/16), pp. 7-53.

both earlier Chinese leadership conceptions and the current Chinese official stance.

Since the acquisition of nuclear weapons, Chinese leadership insisted on keeping a smaller, but not nominal, number of nuclear weapons for deterrence purposes. The maintenance of China's modest number embodies the essentials of minimum deterrence; that is, China still needs this small arsenal for deterrence. These small forces need to be survivable, dispersed, and concealed, which in turn enhances the credibility and reliability of Chinese deterrence forces vis-à-vis the adversary. The essentials of minimum deterrence stem from the fact that smaller numbers of deterrence forces, if well-dispersed and concealed, could provide a nuclear weapon state a second strike capability.<sup>20</sup> That said, although China's deterrence forces remained vulnerable to a first strike for almost three decades since its nuclear weapon test in 1964, Chinese leadership had confidence that successful practice of these essentials could allow China to strike back. The dispersal and concealment strategy enhanced the credibility and survivability of Chinese deterrence forces, and ultimately help explain the puzzle of how minimum number of deterrence forces could effectively deter attack by a stronger side. China's nuclear capability deterred both the U.S. and the Soviet Union in the early stages of its nuclear weapons development program. Contemporary scholarship still focuses on how smaller but more survivable forces serve as the essential foundation of minimum deterrence and how they served as deterrence against the Cold War superpowers.

Both Mao Zedong and Deng Xiaoping supported the maintenance of a modest nuclear capability to reflect minimum deterrence. Mao himself postulated that even a few nuclear weapons would be sufficient for deterrence. Mao stated in 1960, "Our country in the future may produce a few atomic bombs, but we by no means intend to use them. Although we do not intend to use them, why produce

<sup>20.</sup> For interesting account on this particular aspect, see for example, Khan, Pakistan's Nuclear Policy: A Minimum Credible Deterrence; Zafar Khan, "The Conceptual Essentials of Minimum: Explaining Pakistan's Rationale of Minimum Deterrence," Cambridge Review of International Affairs, pp. 1-19.

them? We will use them as a defensive weapon."<sup>21</sup> In the wake of Chinese successful nuclear weapons tests in 1964, Mao stated in an interview, "We do not wish to have too many atomic bombs ourselves. What would we do with so many? To have a few is just fine."<sup>22</sup> This emphasis on a small deterrent force continued under Deng's leadership. Deng is recorded as noting, in reference to deterrence, "France has also built some [nuclear weapons]. We understand why France has built them. Britain has also made some, but not many. Our reason for building *a few* is that we will have them if they have them. Nuclear weapons have only this function (emphasis added)."<sup>23</sup> A small, not large, number of deterrence forces were the official policy of the Chinese government. It is interesting to observe the confidence Chinese leadership placed in quality deterrence over quantity.

This reflects the ongoing debate during the peak of the Cold War within Chinese leadership: Both the Soviet Union and the U.S. sought ever-increasing numbers of nuclear forces, but the Chinese government refused to do so even over internal criticism.<sup>24</sup> Mao and Deng Xiaoping both critiqued a nuclear strategy of massive retaliation and mutually assured destruction that relied upon an excessive number of sophisticated nuclear armaments. Voicing their opposition to the prevalent nuclear strategy of the Cold War superpowers, Chinese leadership noted, "… a future world war will not necessarily be a

<sup>21.</sup> Mao Zedong, *Mao Zedong waijiao wenxuan* (Mao Zedong's selected works on diplomacy) (Beijing: Shijie zhishi chubanshe, 1994), p. 540.

Mao Zedong, Mao Zedong wenji (Mao Zedong's collected works), vol. 7 (Beijing: Xinhua chubanshe, 1999), p. 407.

<sup>23.</sup> Deng Xiaoping, *Deng Xiaoping junshi wenxuan* (Deng Xiaoping's selected works on military affairs), vol. 3 (Beijing: Junshi kexue chubanshe, 2004), p. 15.

<sup>24.</sup> For critical account on bigger number of deterrence forces, see P. M. S. Blackett, "A Critique of Defence Thinking," *Survival* 3, no. 3 (April 1961), pp. 126-134; Blacket, *Studies of War: Nuclear and Conventional* (London: Oliver & Boyd Publications, 1962); Anthony Buzzard, "Massive Retaliation and Graduated Deterrence," *World Politics* 8, no. 2 (1956), pp. 228-237; Buzzard, "Defence, Disarmament & Christian Decision," *Survival* 3, no. 5 (1961), pp. 207-219; Buzzard, John Slessor and Richard Lowenthal, "The H-Bomb: Massive Retaliation or Graduated Deterrence," *International Affairs* 32, no. 2 (1956), pp. 148-165.

nuclear war. This is not only our view, but the Americans and the Soviets also believe that in the future it is quite likely that conventional wars will be fought."<sup>25</sup> Later, in a meeting with the Canadian Prime Minister in 1983, Chinese leadership described their stance on responding to nuclear attack: "... If they want to destroy us, they themselves will also suffer some *retaliation*. We have consistently said that we want to force the superpowers not to dare to use nuclear weapons. In the past, this was to deal with the Soviet Union, to force them not to use these weapons rashly. To have even only *a few weapons* after all is a kind of restraining force (emphasis added)."<sup>26</sup> China would maintain its stance of defensive nuclear deterrence through the deployment of quality survivable forces and hold true to its doctrine of "no-first-use," instead only promising retaliation if attacked by nuclear weaponry.<sup>27</sup>

China faced notable pressure to shift its nuclear doctrine in the 1980's: potential increases in the military budget, the meteoric rise of the Chinese economy, and most importantly, the institutional empowerment bestowed upon the People's Liberation Army needed to fulfill its strategic mandate of breaking down traditional barriers.<sup>28</sup> Despite changes to Chinese strategic and economic institutions in the late 1980's, there was never a major shift in the overall Chinese strategic architecture. Nuclear weapon states often need modification to their forces as they adapt to the prevailing strategic environment — witness the recent change in nomenclature of China's Second Artillery Corps,

<sup>25.</sup> Deng, Deng Xiaoping junshi wenxuan, vol. 2, p. 263.

<sup>26.</sup> Zhongyang junwei bangongting ed., *Deng Xiaoping guanyu xin shiqi jundui jianshe Lunshu xuanbian* (Selection of Deng Xiaoping's exposition on army building in the new period) (Beijing: Bayi chubanshe, 1993), pp. 44-45.

<sup>27.</sup> For excellent works see, M. Taylor Fravel and Evan S. Medeiros, "China's Search for Assured Retaliation: the Evolution of Chinese Nuclear Strategy and Force Structure," *International Security* 35, no. 2 (Fall 2010), pp. 48-87. Also, see an important chapter on China's nuclear strategy in Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict* (Princeton: Princeton University Press, 2014).

<sup>28.</sup> See Fravel and Medeiros, "China's Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure," pp. 75-80.

now the Rocket Force — but they may not reflect a change in overall force posture. (For example, one needs to ask whether the Central Military Commission would assign the Rocket Force with control over the various elements of deterrence.) Chinese strategic doctrine would maintain the influence of its earlier leadership.<sup>29</sup>

However, Western analysis of the evolution of Chinese nuclear strategy assesses it to be quite different from how it is conceptualized by Chinese leadership and scholars. One key theme in the nuclear strategy articulated by China on targeting, operational procedure, and controlled escalation is that it relies upon ambiguity. This leads Western assessments of Chinese nuclear strategy to question whether it truly represents "minimum deterrence"; is it instead a policy of *limited deterrence* or is it best characterized as a strategy of *assured retaliation*?

In his seminal work on Chinese nuclear strategy Alastair Iain Johnston's described a potential shift away from minimum deterrence. Johnston predicted that this possible shift from minimum to limited deterrence would require both qualitative and quantitative improvements in the Chinese force posture. Limited deterrence would entail a greater number of strategic missiles able to carry within a wide variety of platforms - aircraft-launched weaponry, land-based intercontinental ballistic missiles, submarine-launched ballistic missiles (SLBM's), and cruise missiles. These nuclear deterrents would need to harness greater accuracy, mobility, and survivability as well as be deployed under improved command, control, communications, and intelligence systems for early warning and coordination. China would also need to deploy missile defense systems, enhanced civil defense measures, and anti-satellite weapons that could destroy the enemy's war-fighting capabilities. Finally, China would need to adopt a "Launch on Warning" (LOW) posture in opposition to their declared "no-first-use" policy.30

<sup>29.</sup> Ibid, pp. 75-80. Also, see China's Official White Paper on China's Military Strategy, The State Council Information Office of the People's Republic of China (May 2015), http://www.chinadaily.com.cn/china/2015-05/26/content\_20820628.htm (accessed June 25, 2015).

<sup>30.</sup> For interesting analysis on this aspect see, Alastair Iain Johnston, "Prospects

Note that the contemporary works of Fravel, Medeiros, and Narang have separately assessed that Chinese nuclear strategy bears the hall-marks of *assured retaliation* instead of purely minimum or limited deterrence.<sup>31</sup> Various efforts at researching this issue have provided disparate interpretations of Chinese evolving nuclear strategy.

These interpretations have led to a debate that is likely to continue in the future. Indeed, ambiguity does appear to lie at the center of Chinese nuclear strategy, which in turn has created space for diverse understandings of Chinese aims within the scholarship of West and East alike. However, careful academic analysis indicates that the ambiguity present in Chinese strategy is equally present, at least to some extent, in the doctrines of other nuclear-armed states.<sup>32</sup> The intensity of this "ambiguity" varies from one state to another depending on their respective strategic environments. In the case of China, the ambiguity surrounding the term "minimum" in relationship to nuclear strategy has not been alleviated to any significant degree from the official publishing of White Papers explaining Chinese military and nuclear strategy.

Interestingly, the Chinese interpretation of their nuclear strategy differs from positions expressed in Western scholarship. Key Chinese documents explaining the policies of China's security and defense policy such as the Chinese White Papers of 2002, 2006, and 2015 and *The Science of Military Strategy* clearly explain that China's deterrent forces are for defense purposes only.<sup>33</sup> They remain sufficiently credible

for Chinese Nuclear Force Modernization: Limited Deterrence versus Multilateral Arms Control," *China Quarterly* 146 (June 1996), pp. 555-557. For his classic piece on China's evolution of nuclear strategy, see Alastair Iain Johnston, "China's New Old Thinking: the Concept of Limited Deterrence," *International Security* 20 (Winter 1995/96), pp. 5-42.

<sup>31.</sup> See Fravel and Medeiros, "China's Search for Assured Retaliation: the Evolution of Chinese Nuclear Strategy and Force Structure." Also, see an important chapter on China's nuclear strategy in Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict*, pp. 121-152.

<sup>32.</sup> For an interesting account on the role of ambiguity within the nuclear policy postures, see Zafar Khan, "Pakistan's Doctrine of Nuclear First Use: Obstacles and Obsessions," *Contemporary Security Policy* 35, no. 1, pp. 149-170.

and survivable to be used only to avert the threat of nuclear coercion. China would not be the first to use nuclear weapons, but these weapons would be used as an assured retaliation.<sup>34</sup> The language used in these key Chinese policy documents reflects the thoughts and aspirations of earlier Chinese leadership with regard to China's nuclear development program consistent with the doctrine of minimum deterrence. One noted Chinese scholar, Jingdong Yuan, directly contradicts the Western perspective on Chinese nuclear strategy, arguing that nothing has dramatically changed within Chinese nuclear doctrine. In spite of the lack of postural change, he describes the need for the Chinese security establishment to build the effectiveness, sufficiency, and credibility of the Chinese deterrent forces.<sup>35</sup>

A key policy element in Chinese nuclear strategy is its adherence to the traditional non-first-use doctrine and an overall effort to not use nuclear weapons.<sup>36</sup> The Chinese practice of NFU, bolstered by a stance of minimum deterrence, remains unique compared to other established weapon states (as well as those formally recognized by the NPT). While both France and the UK maintain modest levels of deterrent forces, they still have not given up the possibility of nuclear first use. The United States and Russia, despite plans to scale back their nuclear arsenals and their overall deterrence forces, still wield modern conventional armies that themselves serve as deterrence against both other major and non-NPT-recognized nuclear states (the

<sup>33.</sup> See Peng Guangqian and Yao Youzhi (eds.), *The Science of Military Strategy* (Beijing: Military Science Publishing House, 2005).

<sup>34.</sup> For Chinese explanation of China's nuclear strategy, see Information Office of the State Council, *China's National Defense in 2002* (Beijing: December 2002); Wang Wenrong et al, *Zhanluexue (Science of Military Strategy)* (Beijing: Guofang Daxue Chubanshe, 1999); Information Office of the State Council, People's Republic of China, *China's National Defense in 2006* (Beijing, December 29, 2006).

<sup>35.</sup> Yuan, Effective, Reliable, and Credible, pp. 275-301.

For interesting analysis on the tradition of non-use of nuclear weapons against both nuclear and non-nuclear weapons states, see T. V. Paul, *The Tradition of Non-Use of Nuclear Weapons* (California: Stanford University Press, 2009), pp. 92-123.

latter group comprised of India, Pakistan, Israel, and North Korea). In spite of their conventional forces dramatic qualitative leaps from modernization, both the U.S. and Russia have a doctrine of nuclear first-use. Accordingly, nuclear weapons continue to play a significant role in strategic dynamics between the U.S. and Russia.<sup>37</sup>

# China's Policy of No-first use

Given the Chinese political and psychological position that the Chinese minimal deterrent would still suffice to deter a nuclear attack due to their capacity to survive a first strike and answer with assured retaliation, China maintained its policy stance of not being first to use nuclear weapons. This greater confidence in NFU policy arose from certain basic assumptions: First, the Chinese leadership believed that nuclear weapons were not for war-fighting purposes and that both Soviet and American forces would ultimately resort to using conventional weapons. Second, they boldly declared nuclear weapons as "paper tigers," persuading the Chinese to not be intimated by American and Soviet deterrents.<sup>38</sup> Third, despite the vulnerability of Chinese deterrent forces to first strikes from their adversaries during the Cold War, China's geographical vastness would provide the opportunity to sufficiently disperse and conceal their deterrent forces to enable them to survive the first nuclear attack. Fourth, China should promote international arms control and disarmament, with the ultimate goal being the total elimination of all nuclear weapons in the world. Fifth, the NFU option would remain consistent with the Chinese doctrine of minimum deterrence. Finally, the small size of the Chinese nuclear

Elbridge Colby, "The Role of Nuclear Weapons in the U.S.-Russian Relationship," Carnegie Endowment for International Peace, Task Force White Paper, February 26, 2016.

<sup>38.</sup> See Ralph L. Powell, "Great Powers and Atomic Bombs are 'Paper Tigers'," China Quarterly 23 (July-September, 1965), pp. 55-63; Mark A. Ryan, Chinese Attitudes towards Nuclear Weapons: China and the United States during the Korean War (Armonk, N.Y.: M. E. Sharpe, 1989).

deterrent would best match its strategy of non-first-use, as it would be suicidal to use them in a first-use capacity and engender retaliation from a numerically superior nuclear force.

Contemporary Chinese policy documents uphold the tradition of non-first-use; although there are some internal calls to rescind this policy and there has, as of yet, been no official declaration from the leadership of their nuclear forces that they would forego the NFU doctrine. However, there is significant concern that the Chinese will not be able to deter the advanced conventional capabilities of the American forces, especially if they were to be employed in a conflict over Taiwan. Some figures in the Chinese military leadership have noted their support for first use in such a scenario. Zhu Chenghu, a Chinese general, triggered controversy over his remarks that China would consider deploying nuclear weaponry during a conflict with the United States over Taiwan,<sup>39</sup> though this was later rejected by high-level Chinese leadership.<sup>40</sup> Pan Zhenqiang, a retired leader in the Chinese military, criticized Zhu's comments, decrying them as the "wrong theme at the wrong place and the wrong time," linking NFU with strategic stability, a reinforcement of the international arms control process, China's overall international reputation, and avoidance of aggressive confrontation against Taiwan.<sup>41</sup> This highlights how Chinese nuclear leadership considers their weapons from the perspective of politics and psychology. With that noted, the Chinese have confidence that these aspects of deterrence would suffice to deter the adversary from waging a war in the first place. From this assessment, nuclear weapons state's confidence in a modest number of deterrent forces can be considered as one of the essential ingredients of minimum deterrence as conceptualized by Chinese leadership.

See Joseph Kahn, "Chinese General Threatens Use of Bombs if U.S. Intrudes," New York Times, July 15, 2005.

<sup>40.</sup> Al Pessin, "China Says it will not use Nuclear Weapons First," VOA.com, October 19, 2005; "China's Nuclear Chief Makes No-First Use Pledge," *Philadelphia Inquirer*, October 20, 2005.

<sup>41.</sup> Pan Zhenqiang, "China Insistence on No-First-Use of Nuclear Weapons," *China Security* 1 (Autumn 2005), pp. 5-9.

The political and psychological aspects of Chinese nuclear deterrence are best understood in the context of fundamental minimum deterrence. In lieu of drafting an offensive nuclear strategy, Chinese leadership considers their nuclear arsenal as a purely defensive, but effective tool to deter nuclear aggression and counter nuclear coercion. This was upheld by the vulnerability of the Chinese Cold War-era deterrence force; for thirty years, their small size made them open to an enemy first strike and yet they succeeded in staving off the nuclear political threats arrayed against Chinese leadership.<sup>42</sup> Mao Zedong, Deng Xiaoping, and other top Chinese leaders also harbored strong belief in the political and psychological impact of these weapons. Both Mao and Deng envisioned a nuclear strategy of minimal deterrence and eschewed an offensive nuclear strategy in spite of the strategic capabilities afforded to nuclear weapons. In this context, Deng explained the rationale of China's strategy: "Things like strategic weapons and deterrence forces are there to scare others. They must not be used first."43

Contemporary Chinese scholarship in support of its NFU doctrine contends that the employment of nuclear weapons during a conventional conflict (particularly against a non-nuclear state) was neither morally acceptable nor credible. Therefore, Chinese leadership emphasizes the continued advancement of conventional forces bolstered by limited deterrent forces. This could further be augmented by integrating them with a modest number of nuclear weapons. There has been no dramatic shift involving the NFU doctrine since 1964 and is unlikely to do so in the immediate future, even accounting for American advanced conventional capabilities, deployment of the Ballistic Missile Defense system, the NPR, and its rebalancing strategy towards the

<sup>42.</sup> For an interesting and in-depth analysis on these perspective, see Alastair Iain Johnston, "China's New 'Old Thinking': The Concept of Limited Deterrence"; Jeffery Lewis, *The Minimum of Reprisal: China Search for Security in the Nuclear Age* (Cambridge, Mass: MIT Press, 2007); Fravel and Medeiros, "China's Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure."

<sup>43.</sup> Wu Tianfu, "Guoji Hezhanlue Xichao" (Schools of Nuclear Strategic Thinking in the World) (Beijing: Jushi Yiwen Chubanshe, 1999), p. 207.

Asia-Pacific region.44

There are varied academic positions on the likelihood of China retaining the NFU doctrine versus significantly modifying it. While largely restricted to certain analyst circles, debate surrounding this issue helps to foster an environment of openness and transparency in the evolution of Chinese nuclear strategy. This is not a field in which China practices either openness or transparency due to the potential for increasing the vulnerability of its deterrent force. Ultimately, the "red lines" to be crossed before Chinese forces choose to deploy nuclear weapons remains unclear and intentionally ambiguous. General Pan's hypothetical possibilities for the Chinese use of nuclear weapons do not seem comprehensive and may not fully reflect his leadership's intentions.<sup>45</sup>

To conclude, China can officially retain their doctrine of nonfirst-use in the future, as demonstrated through Chinese key policy documents and other official literature. China retains confidence in its small yet survivable deterrent force to retaliate in the aftermath of a first strike, in accordance with a doctrine of assured retaliation, as described by Narang, Taylor and Medeiros. However, the element of ambiguity will remain a central part of the Chinese evolution of nuclear strategy. Other nuclear states, especially the U.S., may not expect a rapid transformation in the openness and transparency of China's overall nuclear strategy. Nevertheless, under their doctrine of

<sup>44.</sup> Su Xiangli, "Zhongguo hezhanlue pingxi" (China's Nuclear Strategy), (in China) Arms Control and Disarmament Association (Beijing, Yearbook on International Arms Control and Disarmament 2005); Li Bin, "Analyzing China's Nuclear Strategy," World Economics and Politics 313 (September 2006), pp. 16-22; Ching-Pin Lin, China's Nuclear Weapons Strategy: Tradition within Evolution (Lexington: Lexington Books, 1988).

<sup>45.</sup> General Pan proposed some hypothetical conflicts in which China would use nuclear weapons against the U.S.: 1) deployment of tactical nuclear arms against China's military assets in conflict over Taiwan; 2) conventional attacks against China's Inter-continental ballistic missile (ICBM) silos or its nuclear infrastructure; and 3) a limited nuclear attack against China. See Pan Zhenqiang, "On China's No-First Use of Nuclear Weapons," *Pugwash Online*, November 26, 2002.

NFU and supported by a modest nuclear arsenal, China should fully realize its potential in terms of upgrading its deterrent forces. The question, however, remains: will China's gradual modernization transform the underlying imperatives of its deterrence doctrine or remain consistent with the principles of minimum deterrence as described in this research. This is discussed in the next section.

# **China's Nuclear Force Modernization**

There is growing debate concerning whether China is modernizing its deterrent forces following changes in its security environment, especially given their concerns over American deployment of BMD systems in Asia under the rationale of protecting their allies; the ambitious policy posture detailed in their 2001 NPR, even following the slight modifications of the 2010 version of that document; and American efforts to extensively modernize the power and accuracy of its conventional forces.<sup>46</sup> Accordingly, China feels threatened. They have two options: One, retain the classic modest but survivable deterrent forces for assured retaliation as it did during the peak of the Cold War, which needs to be credible, reliable, and effective to deter an adversary. This could include a proportional increase of its deterrent forces without making greater shifts to its overall nuclear strategy, and not necessitate rescinding the NFU doctrine. Two, China could make efforts to rapidly transform its nuclear strategy, modernizing both its nuclear and conventional deterrent forces, making contingency

<sup>46.</sup> For interesting analysis on this, see Keir A. Lieber and Darly G. Press, "The Rise of U.S. Nuclear Primacy," *Foreign Affairs* (March/April 2006). For extended version of this article, see Keir A. Lieber and Darly G. Press, "The End of MAD?: The Nuclear Dimension of U.S. Primacy," *International Security* 30, no. 4 (Spring 2006), pp. 1-38; Lewis, *The Minimum Means of Reprisal: China's Search for Security in the Nuclear Age*; Michael S. Chase, Andrew S. Erickson, and Christopher Yeaw, "Chinese Theater and Strategic Missile Force Modernization and its Implications for the United States," *Strategic Studies* 32, no. 1 (2009), pp. 67-114; Fravel and Medeiros, "China's Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure."

plans to shift China away from its traditional doctrine of NFU to make potential adversaries understand China's aggressive rise from the lethality and robustness of its strategic forces and possibly increasing the size of its deterrent forces to achieve its goals.

However, the latter strategic shift might create two consequences: First, a shift away from the NFU doctrine might lead China to increase its aggression and preemptively strike targets in its sphere-of-influence to rapidly increase its political and military objectives. This in turn could lead to American strategic intervention due to its security promises to allies and partners in the region. Two, Chinese endeavors to upgrade their strategic forces through increasing the number of warheads on ICBM's (through MIRV's); building anti-satellite and anti-ship missile capability, crafting the A2/AD strategy (as perceived within the U.S.);47 and modernizing its growing ballistic missile force to use solid rocket fuel instead of liquid fuel could lead to a strategic dilemma: Chinese efforts to improve their strategic position relative to the U.S. could intentionally hurt the position of a separate nation, such as India. India could then improve the capabilities of its deterrent forces to enable a strike against any part of Chinese territory while entering into a stronger strategic partnership with the U.S. to counter China's rise.48 Not only would this remove any certainty surrounding India's

<sup>47.</sup> Although there is a little or no evidence within China about Chinese A2/AD strategy, various US policy documents and papers published in the west talk about the Chinese emerging strategy. See "A Cooperative Strategy for 21st Century Sea Power," The United States Department of Navy (March 2015), http://www.navy.mil/local/maritime/150227-CS21R-Final.pdf (June 25, 2015), pp. 1-48; Sumathy Permal, "China's Military Capability and Anti-access Area-denial Operations," Washington Quarterly 10, no. 2 (November, 2014), pp. 16-32; Oriana Skylar Mastro, "Why China Assertiveness is Here to Stay" Washington Quarterly 37, no. 4 (2014), pp. 151-170; Aaron L. Friedberg, "The Sources of Chinese Conduct: Explaining Beijing's Assertiveness," Washington Quarterly 37, no. 4 (2014), pp. 133-150; M. Taylor Fravel and Christopher P. Twomey, "Projecting Strategy: The Myth of Chinese Counter-intervention," Washington Quarterly 37, no. 4 (2014), pp. 171-187.

<sup>48.</sup> Priya Ranjan Sahu, "First Canister-based Nuclear-capable Ballistic Missile Agni-5 Test Fired," *The Hindustan Times*, February 1, 2015, http://www. hindustantimes.com/india-news/nuclear-capable-ballistic-missile-agni-5-

self-proclaimed nuclear policy of credible minimum deterrence, but it would also arouse American suspicions about the further aims of Chinese nuclear strategy.<sup>49</sup> Thus, while China certainly holds the potential of making another "great leap" in the capabilities of its deterrent forces, there remain significant questions concerning the likelihood of China adopting these strategies to go beyond earlier conceptions of Chinese leadership. The 2015 Chinese White Paper, in describing their so-called Preparation for Military Struggle (PMS), notes "They will make further exploration and more efficient utilization of information resources, strengthen the building of the systems of reconnaissance, early-warning and command and control, develop medium- and long-range precision strike capabilities, and improve the comprehensive support systems."<sup>50</sup>

Thus, under the command and supervision of the Chinese Rocket Force (formerly the Second Artillery), which is responsible for both their conventional and nuclear deterrent force structure, China modernizes its deterrence to meet changes in their geo-political environment. China specifically focuses their efforts on a wide variety of advanced short, medium, and long-range missiles. First, the Rocket Force works to upgrade the quality and increase the number of short-range ballistic missiles (SRBM's) such as the DF-11 and DF-15 (with a 300 km and 600 km range respectively). These tactical weapons still carry significant strategic weight through their improved range, accuracy, and

successfully-test-fired/article1-1312219.aspx (accessed March 19, 2015). Aslo, see "*The Second Modhi-Obama Summit: Building the India-US Partnership*," The Brookings (January 2015), pp. 1-75: www.brookings.edu/...building-the-india -us-partner (accessed March 19, 2015).

<sup>49.</sup> For a gradual shift in India's deterrent force strategy see, Khan, "Emerging Shifts in India's Nuclear Policy: Implications for Minimum Deterrence in South Asia," pp. 94-112; For an interesting account on China's modernization of deterrent forces and its implications for the United States, see Chase, Erickson, and Yeaw, "Chinese Theater and Strategic Missile Force Modernization and its Implications for the United States."

Ministry of National Defense of the People's Republic of China, *China's Military* Strategy, May 26, 2015, http://eng.mod.gov.cn/DefenseNews/2015-05/26/ content\_4586748.htm.

payloads, as they could potentially target American forward deployed forces and bases close to Chinese borders. Second, China is modernizing its medium-range ballistic missiles (MRBM's), such as the DF-21A and DF-21D, with a range of up to 1500km. China is also working on the development of the DF-25 missile, which not only boasts improved accuracy, but could also carry several warheads to a maximum approximate range of 3200km. These Chinese MRBM's are capable of attacking large ships, including aircraft carriers, throughout the Western Pacific. Third, China plans to modernize its nuclear deterrence through enhancing silo-based ICBM's and creating two mobile delivery systems. The CSS-10 Mode 1 and Mode 2 systems (also known as the DF-31 and DF-31A) are Chinese ICBM's with a range of up to 11,200km, sufficient to reach the majority of the U.S. Also, China plans to develop an ICBM that could carry MIRV's. This modernized deterrence force architecture is considered as a counter of the American BMD system in the Asia-Pacific region, deployed to protect its Japanese and Taiwanese allies. Last but not least, China plans to develop additional Jin-class nuclear ballistic missile submarines in complement to its existing fleet of operational nuclear submarines. This is part of a "deep blue" strategy to confront rising challenges in both the South and East China Seas as part of its so-called greater A2/AD strategy.51

These efforts towards modernization indicate the Chinese resolve to make their deterrent forces more credible, survivable, effective, and reliable as a counter to future challenges. Given the three decades of vulnerability faced by their deterrent forces following their initial

<sup>51.</sup> For more detail on China's force modernization, see Office of the Secretary of Defense, *Military Power of the People's Republic of China*, 2008 (Washington, D.C.: U.S. Department of Defense, 2008); Chase, Erickson, and Yeaw, "Chinese Theater and Strategic Missile Force Modernization and its Implications for the United States," pp. 67-114; Fravel and Medeiros, "China's Search for Assured Retaliation: the Evolution of Chinese Nuclear Strategy and Force Structure," pp. 48-87. For more recent detailed analysis on this, see Office of the Secretary of Defense, *Military and Security Developments Involving the People's Republic of China* 2013, Annual Report to Congress, 2013, http://www.defense.gov/pubs/2013\_china\_report\_final.pdf (accessed March 22, 2015).

acquisition of nuclear weaponry, they would like to make every effort possible to ensure the survivability of their forces in the aftermath of an adversary's first strike. One could argue that the modernization of strategic deterrent forces is an essential part of the state's military and security strategy. If China seeks to augment the survivability, credibility, and effectiveness of these deterrence forces, then this would fall within the Chinese historical conception of minimal deterrence. Such thinking appears in the most recent Chinese White Paper; that is, nowhere in it do Chinese officials link modernization to offensive or expansionist goals, though they do mention the need to modernize to meet a modern and drastically changing strategic military situation. The White Paper does not mention anything about shifting towards a limited deterrence doctrine, as conceptualized within Western literature, nor does it mention rescinding their traditional NFU doctrine; China will instead only retaliate in the event of an attack. The White Paper elaborates: "China has always pursued the policy of no first use of nuclear weapons and adhered to a self-defensive nuclear strategy that is defensive in nature. 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. China has always kept its nuclear capabilities at the minimum level required for maintaining its national security."52

Chinese officials discuss the need for a build-up in modernized military forces to meet with "the wide range of emergencies and military threats." The White Paper lists the intent of their modernization efforts as "to resolutely safeguard the unification of the motherland; to safeguard China's security and interests in new domains; to safeguard the security of China's overseas interests; to maintain strategic deterrence and carry out nuclear counterattack."<sup>53</sup> From their per-

Ministry of National Defense of the People's Republic of China, China's Military Strategy, May 26, 2015, http://eng.mod.gov.cn/DefenseNews/2015-05/ 26/content\_4586748.htm.

<sup>53.</sup> Ibid.

spective, China's nuclear strategy and military modernization could remain both minimal and defensive in nature to protect its core security interests without necessarily challenging U.S. dominance in the Asia-Pacific region. China could set strategic limitations to prevent it from becoming offensive and expanding its capacity to project military force beyond its core strategic domains of the South and East China Sea. Limiting their projective capabilities and largely containing their current nuclear strategy in this way could arguably be consistent with earlier conceptions of minimum deterrence.

However, increases to the number of Chinese nuclear warheads, deploying its deterrent forces in an offensive capacity, and the further development of more sophisticated delivery systems may not be consistent with minimum deterrence. China possesses enormous potential to transform the fruits of its constant economic growth into a rapidly-modernized strategic force, with a gradual shift in strategic doctrine. They may not intend to increase the number of strategic forces from their current modest level, but they surely have the potential to do so should they desire in the future. To some, current efforts to modernize strategic forces could represent a step towards achieving advanced conventional capabilities, similar to those of the U.S., whose conventional forces are advanced to a sufficient level as to challenge the strategic deterrence of both Russia and China.54 China's economic and strategic rise provides incentives to China to advance its conventional weapons while also granting it the potential of modernizing its strategic forces to reduce vulnerabilities and project power in both territorial and maritime affairs. This may have tremendous policy implications.

One, in complex tactical environment involving electronic warfare and missile defense systems, the Chinese strategic forces may effect a doctrinal shift beyond minimal deterrence. In an armed contest against the U.S., China would require a sufficient missile force capability,

For excellent analysis on this, see Andrew Futter and Benjamin Zala, "Advanced U.S. Conventional Weapons and Nuclear Disarmament: Why the Obama Plan will not Work," *The Non-Proliferation Review* 20, no. 1 (2013), pp. 107-122.

with a greater offensive potential, to counteract their ballistic missile defense system. Also, to counter the complex electronic warfare capabilities of their adversary, China requires its own sophisticated information warfare capabilities, bolstered by the potential for "rapid response" and "assured second-strike retaliation." In the words of Chinese strategists, this is to achieve the capability to successfully "implement a nuclear counterattack on the enemy's important strategic and campaign objectives, set back the enemy's strategic intention, shake the enemy's willpower of war, paralyze the enemy command system … weaken the enemy's war potential and contain the escalation of nuclear war."<sup>55</sup> This reflects China's current doctrine of "active defense," which envisages an armed force able to rapidly prepare for counterattacks, supplemented by launch-on-warning and launch-under-early-attack forces.

Second, in an evolving strategic environment that increases Chinese vulnerability, they could introduce the element of "flexibility" into their NFU doctrine, concurrent with modernizations made to their conventional and strategic forces. Chinese strategists may persuade their leadership to use nuclear weapons first under three hypothetical scenarios: when its territorial integrity is threatened, when its strategic forces and related facilities suffer attack from sufficiently threatening conventional weapons, and when lowering the nuclear threshold would prevent intervention in a crisis or conflict over Taiwan.<sup>56</sup>

Third, the U.S. and its allies may interpret China from a more aggressive perspective as it completes its plans for modernization. While China may consider its efforts to be a mere endeavor to enhance the credibility, survivability, and effectiveness of their strategic forces under the concept of minimum deterrence, others may interpret these acts to be a reflection of China's "new assertiveness," as described by Alastair Iain Johnston.<sup>57</sup>

<sup>55.</sup> Chase, Erickson and Yeaw, "Chinese Theatre and Strategic Missile Force Modernization and its Implications for the United States," p. 94.

<sup>56.</sup> Ibid., pp. 96-97.

<sup>57.</sup> Alastair Iain Johnston, "How New and Assertive is China's New Assertiveness?" *International Security* 37, no. 4 (Spring 2013), pp. 7-48.

Arguably, Chinese nuclear strategy retains the essential ingredients of the strategy proposed by its earlier leadership. Even in consideration of the various interpretations that have emerged about their evolving nuclear strategy and newly modernized interpretations, these ingredients retain the essence of a doctrine of minimum deterrence. China's efforts to augment the capabilities of their conventional forces may serve to not only protect their core economic and strategic interests (as depicted by the 2015 White Paper), but also assist the international community in their fight against piracy, terrorism, and other shared threats to maritime security.

### Conclusion

As articulated in their most recent policy document, the 2015 White Paper, Chinese nuclear strategy has not experienced the substantial changes that affected the strategies of the Soviet Union and of the United States during the Cold War. While security and deterrence were the predominant factors in acquiring nuclear weapons, China did not seek the massive arsenals, sophisticated delivery systems, and rapid modernization that characterized the nuclear weapons of its chief Cold War adversaries. Contemporary accounts on Chinese nuclear strategy observe how this modest stockpile of deterrent forces remained vulnerable to attack for more than three decades. Mao Zedong and Deng Xiaoping had an indelible influence on Chinese nuclear strategy, leading their nation to show great patience, practice a defensive posture, and eschew an offensive strategy. Chinese leaders also instilled confidence by labeling nuclear weapons as "paper tiger[s]," preventing them from being intimidated by Cold War nuclear threats. Since the beginning of its nuclear weapons development program, it opted for a doctrine of no-first use, a small number of deterrent forces, and the "minimum means of reprisal," also known as "assured retaliation." While there are some elements of "limited deterrence" within China's nuclear strategy, fully pursuing such a deterrence strategy would require a substantial advancement

of the capabilities of their conventional and strategic forces, which would not hew true to the earlier expressed wishes of their leaders.

Ambiguity plays a key role in China's nuclear strategy and will continue to do so in the future. It is still unclear if China has developed tactical nuclear weapons or if they could be made an effective part of their deterrence policy. Also, it remains to be seen if China will attempt to use their nuclear arsenal to deter sophisticated conventional attacks, which could mean a dramatic shift in their longstanding doctrine of no-first-use; indeed, it would represent an outright departure, given the threats that may emerge. In the next decade or sooner, China will face serious challenges from the U.S. policy posture towards China and the mutual perceptions that exist between them, particularly in the Asia-Pacific. Given a strategic environment in which the U.S. could perceive China's strategic rise as a threat, it also remains to be seen if China will no longer practice the essentials of minimum deterrence. The West is unsatisfied, despite the release of official documents explaining Chinses security and military policy. This could force China to pursue additional openness and transparency over their nuclear strategy, a course that may be shunned by Chinese leadership for fear of increasing the vulnerability of their strategic deterrent.

The aforementioned ambiguity, so essential to Chinese nuclear strategy, has in turn given rise to disparate interpretations. China gradually, not rapidly, modernizes aspects of their deterrence forces to enhance their credibility, reliability, and survivability. The country's economic and strategic potential could lead to a nuclear strategy more inconsistent with their proclaimed doctrine of minimum deterrence should it shift away from a doctrine of first use, increase the number of both strategic and tactical nuclear weapons, create an offensive military strategy in lieu of its current defensive one, or pursue a Cold War-type policy of assured destruction. This would be inconsistent with the essentials of minimum deterrence expressed by Chinese leadership. Chinese nuclear strategy today remains consistent with this concept through their no-first-use doctrine; modest number of deterrent forces; strategy of concealment, survivability, and dispersal; the central role of ambiguity in their strategy of deterrence; their maintenance of the capability for assured retaliation; and the modernization of their deterrence forces to enhance their penetrability, accuracy, and effectiveness. There is no notable shift in these elements within China's nuclear strategy; ultimately, as denoted by the White Paper, China's efforts to modernize its conventional forces and maritime deterrents are a reaction to rising challenges, limited to only the South and East China Seas and not representing an attempt to push the U.S. from the region.

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