

Annual Student Award of Excellence 2017

Second Place

*China's Evolving Nuclear Forces: Changes, Rationales and  
Implications*

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Since China became a nuclear power in 1964, they have maintained a small and relatively unsophisticated nuclear force. Over the past two decades, however, Beijing has embarked on a comprehensive modernization program to quantitatively and qualitatively improve this force including: a gradual increase in nuclear warheads; expanding numbers and types of missile delivery vehicles; and efforts to build a full-fledged nuclear triad. These developments do not reflect or indicate a distinct shift in Chinese views towards or policy governing the purpose and use of nuclear weapons, but rather signal a maturation of its technological competencies to achieve and retain a secured second-strike capability: an objective long sought after. China does not see nuclear weapons as usable instruments of national power, except in the exclusive role of

detering other nuclear-armed states from threatening to and/or actually using nuclear weapons against them. Possessing a force capable of retaliating after having been attacked is seen as sufficient for Beijing in order to achieve deterrence at the nuclear level. Nuclear weapons, furthermore, have and continue to play a small role in China's strategic calculations and national security endeavours, evidenced by the prioritization of conventional capabilities over nuclear ones.

Military developments by the United States including Ballistic Missile Defence (BMD) and Precision Global Strike (PGS) are seen by China as threatening the credibility of their nuclear deterrent, motivating the construction and deployment of a more modern, diverse and capable force. These force reconfigurations, though, create both operational and doctrinal issues for the Chinese political and military leadership as well as the potential of causing confusion and misunderstandings with other nuclear powers, most importantly the United States, regarding the rationales informing these developments. Efforts to retain a secured second strike capability, including reaching nuclear technological parity with the United States (and Russia), could be misinterpreted as a move to develop a first-strike oriented force, possibly in order to play a greater role within their foreign and military strategies. Despite some uncertainty behind particular force developments, China's nuclear posture is not expected to transform significantly due to enduring assessments by Beijing on the threats facing them and the utility of nuclear weapons to address these.

Ensuring the nuclear force balance between Beijing and Washington remains a minor and largely benign matter separated from and not influencing other more divisive matters is critical in the maintenance of their relatively stable, but increasingly complicated and tense, great power relationship and the international system in general. It remains premature, unnecessary and unlikely that formal arms control talks will occur given the large asymmetries between their nuclear arsenals. Building and maintaining robust relations and forums, however, between their nuclear and strategic communities is necessary to understand the political and military views, priorities and differences between them regarding nuclear weapons and strategy. One of the most pressing challenges is demarcating between military strategies of a conventional versus nuclear nature given that a number of technologies being developed are applicable to both realms. Beijing and Washington must clearly signal an understanding of their

nuclear relationship as one defined by mutual vulnerability and the necessity of providing guarantees and evidence that their respective military technological developments and force structure changes are not designed to alter this reality.

### **Nuclear Force Structure Changes**

With the near absence of any official information regarding China's nuclear arsenal analysts heavily rely on foreign intelligence estimates of its size and capabilities, and extrapolating from this information the intentions, priorities and strategies behind the growing and diversifying force.<sup>1</sup> All of the established nuclear powers are modernizing their nuclear forces, but of the five recognized Nuclear-Weapon States China is the only one that is quantitatively augmenting its force, both in terms of warheads and delivery systems, though at a gradual pace.<sup>2</sup> China describes its nuclear force as 'lean and effective' with requirements adjusted in order to maintain what they term a 'minimum deterrence' posture: the lowest number of nuclear weapons deemed necessary to carry out a successful second strike after a nuclear power has attacked them in accordance with its No First Use Policy.<sup>3</sup>

Current estimates posit China has approximately 260 nuclear warheads capable of being fitted on 180 delivery platforms, comprised of a mixture of land-based ballistic missiles (which account for the vast majority of their delivery systems); Submarine-Launched Ballistic Missiles; a small number of cruise missiles; and around 20 nuclear-

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<sup>1</sup> The most cited sources for this information include foreign governments, specifically the United States Department of Defence Annual Report to Congress entitled "Military and Security Developments Involving the People's Republic of China" as well as private organizations and think-tanks such as the Bulletin of the Atomic Scientists, the Federation of American Scientists, the Nuclear Threat Initiative and the Stockholm International Peace Research Institute (SIPRI).

<sup>2</sup> The five Nuclear-Weapon States (NWS) – China, France, Russia, the United Kingdom and the United States- are those states recognized as legitimately possessing nuclear weapons according to the Non-Proliferation Treaty (NPT), an international agreement with the declaratory goal of stopping proliferation in support of eventual world-wide nuclear disarmament. This is to be accomplished by the pledge of the five NWS to eventually dismantle their arsenals but facilitate technological transfers of the use of nuclear power for peaceful energy purposes to the Non-Nuclear Weapon States (NNWS) which in return pledge not to pursue nuclear weapons of their own. Almost all of the few number of countries not party to the Treaty are nuclear-armed states including India, Israel, Pakistan and North Korea, the latter of which withdrew from the NPT in 2003. For a broad overview of the state of nuclear weapons globally see Hans M. Kristensen and Robert S. Norris, "Slowing Nuclear Weapon Reductions and Endless Nuclear Weapon Modernizations: A Challenge to the NPT," *Bulletin of the Atomic Scientists* 70, 4 (2014): pp. 94-107.

<sup>3</sup> The State Council Information Office of the People's Republic of China, "Force Developments in Critical Security Domains," in *China's Military Strategy*, May 2015.

capable aircraft.<sup>4</sup> Reporting in 2011 claiming China may possess upwards of 3000 nuclear warheads stored in a series of underground facilities throughout the country have been thoroughly discredited due to the well-known amounts of fissile material (both highly enriched uranium and plutonium) China possess.<sup>5</sup> Despite the gradual growth in its warhead inventory over the past decade, any desire to dramatically increase this number beyond 300 warheads would require a significant breakthrough in (and employment of) miniaturizing technologies and/or restarting fissile material production which Beijing shows no proclivities of doing so.<sup>6</sup> Remaining a fraction of the force sizes of the United States and Russia (which despite decades of negotiated bilateral arms reductions still account for over 90% of global nuclear warheads<sup>7</sup>), China is estimated to possess the fourth largest nuclear warhead arsenal and the only state within reach of constructing a full-fledged nuclear triad in the near future; eventually joining an exclusive group only populated by Russia and the United States.

#### *Land-Base Nuclear Forces*<sup>8</sup>

For the first few decades of its existence, China's nuclear forces consisted exclusively of land-based Medium and Intermediate Range Ballistic Missiles (MRBM/IRBMs)<sup>9</sup> and did not field an InterContinental Ballistic Missile (ICBM) until

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<sup>4</sup> For a comprehensive comparison of the most credible estimates on Chinese nuclear weapons by various organizations see Anthony H. Cordesman, Joseph Kendall and Steven Colley, "China's Nuclear Forces and Weapons of Mass Destruction," in *Chinese Strategy and Military Modernization in 2015* (Center for Strategic and International Studies, 21 July 2016); <https://www.csis.org/analysis/china%E2%80%99s-nuclear-forces-and-weapons-mass-destruction>

<sup>5</sup> "Georgetown Students Shed Light on China's Tunnel System for Nuclear Weapons", *Washington Post*, 29 November 2011; Hans M. Kristensen, "No, China Does Not Have 3000 Nuclear Weapons," *Federation of American Scientists*, 03 December 2011. <https://fas.org/blogs/security/2011/12/chinanukes/>

<sup>6</sup> Jeffery Lewis, *Paper Tigers: China's Nuclear Posture* (London: Routledge, 2014), pp. 82-83, 95; Nuclear Threat Initiative, *China*, April 2015.

<sup>7</sup> Stockholm International Peace Research Initiative (SIPRI), *Trends in World Nuclear Forces, 2016*, June 2016.

<sup>8</sup> Chinese missile designations are used throughout this paper. The Dongfeng/DF ('East Wind') series refers to China's land-based ballistic missiles while the Ju Long/JL ('Giant Wave') missile series refers to Submarine-Launched Ballistic Missiles. For American designation of these missiles see: United States Department of Defense (DOD), *Military and Security Developments Involving the People's Republic of China* (2016): pp. 22-28.

<sup>9</sup> The categorization of ballistic missiles, whether nuclear or conventional, are defined by their range. Short-Range Ballistic Missiles are 1,000 km or less; Medium-Range Ballistic Missiles are 1,000-3,000 km; Intermediate-Range Ballistic Missiles are 3,000-5,500 km and Inter-Continental Range Ballistic Missiles are

1985, largely due to technological difficulties in missile and warhead designs to produce such a weapon.<sup>10</sup> Since the 1990s, in an effort to increase the survivability of its nuclear forces against a disarming first strike and mobilize its remaining assets to conduct a counter-attack, China has slowly begun to replace older missiles which are fixed location, liquid fuel and single warhead with those that are solid fueled, road-mobile and capable of carrying multiple warheads. China's DF-3/DF-4 I/MRBMs are being phased out and newer versions in the DF-21 and DF-31 missiles are coming into service. The percentage of ICBMs comprising its nuclear force, however, is increasing with a growing number of nuclear warheads assigned to these missiles. The majority of China's ICBMs are the DF-5A and DF-5B, both silo based with the latter type assessed to be equipped with Multiple Independent Re-entry Vehicles (MIRV).<sup>11</sup> Combined with their newest ICBM, the DF-31A (which is road mobile and solid fuel) China has approximately 45-75 ICBMs capable of reaching the United States.<sup>12</sup> The United States Department of Defense (DOD) reports, as well, that China is developing another ICBM: the DF-41, a road-mobile missile capable of carrying MIRVs. The DOD predicts that China will have over 100 ICBMs by 2020 capable of striking the United States, along with a smaller force of DF-21 and DF-31 missiles to deter regional nuclear rivals such as Russia and India. In September 2015, China announced a new nuclear ballistic missile during a military parade, the DF 26 which is suspected of being a next generation IRBM, but almost no other intelligence exists about the missile.<sup>13</sup>

### *Sea-Based Nuclear Forces*

One of the most significant and somewhat surprising nuclear advancements is China's ongoing development of a sea-based nuclear capability via the construction of a fleet of Nuclear Ballistic Missile Submarines (SSBNs) named the Jin-Class. China currently has built four (of a total expected fleet of five or six) of these vessels that are capable of carrying 12 Submarine-Launched Ballistic Missiles (SLBM), named the JL-2,

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5,500 km or more. For further description of these missile categories see *Military and Security Developments Involving the People's Republic of China*, pp. 72, 109.

<sup>10</sup> Lewis, *Paper Tigers: China's Nuclear Posture*, p. 99.

<sup>11</sup> Multiple-Independent Re-entry Vehicles (MIRV) is a nuclear payload with multiple warheads capable of either targeting their own individual targets or a collective one. *Military and Security Developments Involving the People's Republic of China*, p. 25; Hans M. Kristensen and Robert S. Norris, "Chinese Nuclear Forces, 2015," *Bulletin of the Atomic Scientists* 71, 4 (2015): pp. 77-84.

<sup>12</sup> Lower end projection of China's ICBM force stems from the Bulletin of Atomic Scientists while the upper end of this range is from the US DOD. Cordesman, Kendall and Colley, "China's Nuclear Forces and Weapons of Mass Destruction," pp. 8-10.

<sup>13</sup> *Military and Security Developments Involving the People's Republic of China*, pp. 22-25.

with a range of 7,400 km, requiring these assets to sail half-way into the Pacific Ocean in order to be in targeting range of the United States.<sup>14</sup> While this is not China's first SSBN or SLBM, their predecessors: the Xia Class SSBN and JL-1 SLBM were never operationally capable and suffered from numerous funding and technological shortcomings. China now appears committed to building, maintaining and advancing its SSBN program, with evidence that the People's Liberation Army's Navy (PLAN) is already in the planning stages of building their next generation of SSBN (Type 096) after the Jin-Class and a new SLBM, the JL-3.<sup>15</sup> It remains uncertain, though, what the operational missions and tempo of the Jin-Class SSBNs will be, especially if they will maintain a continuous at sea nuclear deterrent or only be sent to sea armed in the event of a crisis.

### *Nuclear Capable Aircraft and Cruise Missiles*

China maintains a small fleet of aircraft, the H-6 short-range bomber, capable of being used as a nuclear delivery platform. The PLA Airforce (PLAAF) continues, as well, to develop long-range bombers – including a stealth variant - capable of performing strategic deterrence, a mission assigned to the PLAAF in 2012.<sup>16</sup> China is building, also, a nuclear-capable Land Attack Cruise Missile (LACM) for the H-6 bombers named the CJ-20.<sup>17</sup>

### *Other Nuclear Force Changes*

A top priority for China with respect to its nuclear missiles is making advancements in MIRVs, decoys, chaff, jamming and thermal shielding to overcome Ballistic Missile Defence (BMD) technologies being pursued by the United States. Beijing has indicated, as well, they are exploring early warning systems to better detect and react to indications of a nuclear first strike, in order to more efficiently mobilize retaliatory forces.<sup>18</sup> Alongside capability advances, China's nuclear forces have been exposed to increasingly more sophisticated and complex training regimes to focus on

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<sup>14</sup> Kristensen and Norris, "Chinese Nuclear Forces, 2015," p. 82.

<sup>15</sup> *Military and Security Developments Involving the People's Republic of China*: p. 26; Hans M. Kristensen, "Is China Planning to Build More Missile Submarines?" *Federation of American Scientists*, 23 April 2015, <https://fas.org/blogs/security/2015/04/china-subs/>

<sup>16</sup> *Military and Security Developments Involving the People's Republic of China*, p. 38.

<sup>17</sup> Kristensen and Norris, "Chinese Nuclear Forces, 2015, pp. 82-83.

<sup>18</sup> *China's Military Strategy*, "Force Developments in Critical Security Domains."



abilities to manoeuvre, camouflage and launch under simulated combat scenarios. Despite the construction of a more combat capable force, China's nuclear forces remain on low alert warning status with warheads not mated on delivery mechanisms in peacetime.<sup>19</sup>

Organizationally, China's nuclear forces underwent a noticeable change in late 2015 when the Second Artillery Corps was renamed the PLA Rocket Force (PLARF) and promoted to a full-service in equal standing to the other military branches – the PLA (Army), PLAN (Navy) and PLAAF (Airforce). The PLARF, like its predecessor the Second Artillery Corps, reports directly the Central Military Commission, the highest governing body in charge of the military with its chairman, Chinese President Xi Jinping. Maintaining responsibility for both nuclear and conventional land-based missiles, the PLARF is now also responsible for all nuclear warheads and missiles, including those designed for naval and air platforms. Beijing has made it clear, however, that these organizational changes do not in any way signal an alteration in its views on nuclear weapons or its policy governing their purpose and use.<sup>20</sup>

Changes, though, both in terms of numbers and capabilities of their nuclear forces inevitably raises questions and concerns about the motivational underpinnings of these endeavours. Are these developments informed by and stem from a coherent, clear and declared strategy? Even if Beijing's actions are in accordance with its declared nuclear strategy will further technological advancements create new realities that may change Chinese thinking and policy towards nuclear weapons? In exploring these matters, one of the greatest errors made is to import Western strategic thinking and experience about nuclear weapons to explain China's nuclear capability developments. As a result, the overreliance on capability analyses to the exclusion of investigating and researching (or simply not taking seriously) authoritative Chinese publications and writings, as well the political and historical context surrounding their emergence and maturation as a nuclear power, is detrimental to a comprehensive understanding of their views on nuclear policy and strategy.<sup>21</sup> Such documentation, while sparse, sheds light on Chinese perceptions of nuclear weapons, including their purpose, utility and influence on determining force requirements.

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<sup>19</sup> Kristensen and Norris, "Chinese Nuclear Forces, 2015," p. 77.

<sup>20</sup> Kelsey Daveport, "China Elevates Nuclear Rocket Force," *Arms Control Today*, March 2016, [https://www.armscontrol.org/ACT/2016\\_03/News/China-Elevates-Nuclear-Rocket-Force](https://www.armscontrol.org/ACT/2016_03/News/China-Elevates-Nuclear-Rocket-Force); Shannon Tiezzi, "The New Military Force in Charge of China's Nuclear Weapons," *The Diplomat*, 05 January 2016, <http://thediplomat.com/2016/01/the-new-military-force-in-charge-of-chinas-nuclear-weapons/>

<sup>21</sup> Li Bin, "Chinese Thinking on Nuclear Weapons," *Arms Control Today*, December 2015, [https://www.armscontrol.org/ACT/2015\\_12/Features/Chinese-Thinking-On-Nuclear-Weapons](https://www.armscontrol.org/ACT/2015_12/Features/Chinese-Thinking-On-Nuclear-Weapons); Lewis, *Paper Tigers: China's Nuclear Posture*, p. 29.

## China's Nuclear Policy and Strategy

Ever since their successful nuclear weapons test in 1964, China has maintained and abided by a No Use/ No-First Use (NU/NFU) nuclear policy, which was most recently reiterated in their May 2015 Defence White Paper. China, furthermore, is the only Nuclear-Weapon State to have a NU/NFU policy, reflecting the very distinct views Beijing holds towards the purpose and use of nuclear weapons in contrast to the United States and the Soviet Union/Russia.<sup>22</sup>

Captured within their NU policy, China has repeatedly pledge to never use or threaten to use nuclear weapons against: 1) non-nuclear weapon states; 2) in nuclear weapons free zones; and 3) in response to conventional aggression. As a corollary, Beijing has pledged, under its NFU policy, to never use nuclear weapons in a first strike capacity against other nuclear-armed countries and will only use them for retaliation after China has been attacked with nuclear weapons.<sup>23</sup> Nuclear weapons are designed only to deter the threat or actual use of nuclear weapons on China and if deterrence fails to be used in a retaliatory capacity to cease nuclear attacks and restore deterrence. In order to ensure deterrence is established, China maintains what they term a 'minimum deterrence' force posture: possessing the smallest number of nuclear weapons necessary in order to survive a first strike by any would be aggressor and carry out a retaliatory strike in kind.

NFU should not be seen as fully fledged and fleshed out operationalized concept but more so an ideological statement about the use and purpose of nuclear weapons which has been at the cornerstone of China's nuclear policy since its inception.<sup>24</sup> China, furthermore, has repeatedly stated their commitment to never enter into a nuclear arms race and has, after decades of suspected proliferation activities, recently become a strong supporter of the global non-proliferation regime. In contrast, however, to the clear and repeated declarations of these policies, the complete lack of official

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<sup>22</sup> India, though not a recognized Nuclear-Weapon State under the Non-Proliferation Treaty, also possesses a No-First Use policy. Shivshankar Menon, "Why India Pledges No First Use of Nuclear Weapons," *Huffington Post*, 19 November 2016

<sup>23</sup> *China's Military Strategy*, "Force Developments in Critical Security Domains."

<sup>24</sup> Lewis, *Paper Tigers: China's Nuclear Posture*, p. 30.



information pertaining to the size, disposition and capabilities of China's nuclear forces has raised suspicions in Western defence and strategic communities questioning the genuineness and credibility of Beijing's declaratory policies. Official documentation remains scarce, but over the last two decades China has slowly begun to formalize and regularly publicize its views and policies regarding strategic and military matters, including their nuclear arsenal, specifically via its biennial Defence White Papers which are largely for external audiences. Another important document release occurred in late 2013 when the Chinese Academy of Military Sciences published an updated edition of *The Science of Military Strategy*, a publication for Chinese military professionals, as the most comprehensive account of the PLA's views across a number of strategic issues. These included the political philosophy underpinning and operational principles forming China's nuclear weapons force structure and strategy.<sup>25</sup>

Within these documents, China clearly articulates that it views nuclear weapons as solely designed to deter nuclear aggression, not as weapons to accomplish discrete military objectives. China describes its nuclear forces, furthermore, as its strategic cornerstone in preserving its national survival. The nature of nuclear weapons, though, specifically its destructive potential is viewed as a real and daunting deterrent on any potential aggressor from crossing the nuclear threshold, rendering such a possibility quite remote. In the highly unlikely event of a nuclear attack, nuclear weapons are not considered a war-winning mechanism, but employed to inflict unacceptable damage on an aggressor to stop them attacking China. Nuclear weapons, therefore, are not for winning a nuclear war but ceasing it. Unlike the United States and the Soviet Union during the Cold War, however, China assess unacceptable damage as a very low threshold with the possibility of losing one or two cities enough to effectively deter other nuclear-armed countries from attempting a first strike.<sup>26</sup>

In order to achieve unacceptable damage, China's nuclear strategy is to target an opponent's cities (termed counter-value) instead of its military forces (termed counter-force) in order to inflict the greatest damage with fewer weapons by attacking soft targets instead of having the burden of locating dispersed (and most likely well

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<sup>25</sup> George Kulacki, "The Chinese Military Updates China's Nuclear Strategy," *Union of Concerned Scientists*, March 2015, <http://www.ucsusa.org/sites/default/files/attach/2015/03/chinese-nuclear-strategy-full-report.pdf>

<sup>26</sup> Chinese assessments of unacceptable damage stands in stark contrast to American and Soviet ones designed to achieve Mutually Assured Destruction which was seen as the critical balance to ensure deterrence between the two. Lewis, *Paper Tigers: China's Nuclear Posture*, p. 30; David C. Grompet and Phillip C. Saunders, "Mutual Nuclear Restraint," in *The Paradox of Power Sino-American Strategic Restraint in an Age of Vulnerability*, eds., David C. Grompet and Phillip C. Saunders (Washington: National Defence University Press, 2011), pp. 71-94.

protected and strengthened) military facilities.<sup>27</sup> In order to properly capture key features of China's nuclear force strategy that govern and are reflected in their nuclear force posture, some Western scholars have advocated the term assured retaliation rather than minimum deterrence.<sup>28</sup> These features includes: a nuclear force governed by highly centralized command system unwilling to decentralize authority to lower echelons; maintaining low levels of alert status; focus on survivability through a number of tactics including numerical ambiguity, concealment, mobility and deception; and forces organized and trained to conduct retaliatory strikes, including in conditions of nuclear warfare. Describing China's nuclear strategy of assured retaliation, as well, further elucidates the distinct differences between their nuclear force posture and those which employ an asymmetrical escalation strategy (such as Pakistan and possibly North Korea) which privilege a nuclear first strike against a conventional and/or nuclear superior opponent characterized by high alert status and levels of readiness of low yield weapons mounted on short range delivery mechanisms (commonly known as theatre nuclear weapons).<sup>29</sup>

Estimating the possibility of a nuclear strike to be very low, even when they possessed a very rudimentary and vulnerable force susceptible to a first strike, Chinese leaders have been primarily concerned about the threat of using nuclear weapons, termed nuclear blackmailing, by the superpowers to gain strategic concessions. Acting from a position of relatively weakness, the development of nuclear weapons, which Mao had originally dismissed a 'paper tigers', were motivated to cease being vulnerable to nuclear blackmail and coercive diplomacy as much as if not more than the threat of an actual nuclear attack.<sup>30</sup> For example, China's nuclear arsenal, though still extremely primitive at the time, seems to have induced caution in the Soviet Union for threatening to use nuclear weapons against them during the Zhenbao Island Crisis in 1969 due to uncertainties they could unequivocally eliminate Beijing's nuclear arsenal with a first strike.<sup>31</sup>

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<sup>27</sup> Cordesman, Kendall and Colley, "China's Nuclear Forces and Weapons of Mass Destruction," pp. 9-10.

<sup>28</sup> 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, 2 (2010): pp. 48-87.

<sup>29</sup> Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict* (Princeton: Princeton University Press, 2014), 124-126.

<sup>30</sup> Sun Xiangli, "Analysis of China's Nuclear Strategy," *China Security* 1 (Autumn 2005):23-27.

<sup>31</sup> Yang Kuisong, "The Sino-Soviet Border Clash of 1969: From Zhenbao Island to Sino-American *Rapprochement*," *Cold War History*, 1:1 (2000):31-41.

China's political and strategic communities have for decades seen nuclear weapons as political devices more so than useable military ones. Beijing's repeated declarations to not become engaged in nuclear arms racing does not discredit the need to build and modernize forces to maintain an assured retaliation capability, but rather is with respect to any possible battle over international hegemony in which the most dominant state is that which has the largest and most capable nuclear forces.<sup>32</sup> China does not see nuclear weapons as instruments of national power in any other realm but nuclear deterrence. In contrast to both the American and Russian views on nuclear weapons strategy as one of developing dominance throughout a ladder of possible escalation, China's nuclear strategy is not designed to destroy another country's nuclear capability, decapitate its government, or vaporize its entire population, society or economy, but simply to stop a nuclear exchange.<sup>33</sup> In support of maintaining a survivable nuclear force capable of assured retaliation, China employs a strategy of opacity by not releasing details of its force structure or capabilities to create uncertainty in would-be aggressors over their ability to completely neutralize China's nuclear forces before they could conduct a counter-attack.<sup>34</sup>

Political views have played a guiding, not subordinate, role in determining Beijing's limited capability development over the decades. Despite arguments that their nuclear weapons policy and posture is largely a function of their technological limitations, China has chosen not to build a far larger arsenal and place them on a higher alert status and readiness level despite possessing the resources and skills to do so.<sup>35</sup> Though significant changes have occurred within its nuclear force structure, policy and mandates have not altered dramatically over the years despite other wholesale reconfigurations of structure and missions throughout the PLA. Chinese views and behaviour with respect to nuclear weapons have remained relatively constant despite fundamental changes in regimes, domestic and foreign policy priorities, and regional and international security situations. The *1958 Guidelines for Developing Nuclear Weapons* issued to the PLA ordering the construction of high-yield thermonuclear weapons mounted onto long-range delivery platforms meant to arrest any attempt by foreign powers of using their nuclear arsenals to coerce Beijing is still relevant today.<sup>36</sup>

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<sup>32</sup> Bin, "Chinese Thinking on Nuclear Weapons."

<sup>33</sup> Kulacki, "The Chinese Military Updates China's Nuclear Strategy," p.3.

<sup>34</sup> Adam P. MacDonald, "China's Modernizing Nuclear Force Structure," *Frontline Defence* 12, 5 (2015): pp. 27-30.

<sup>35</sup> Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict*, pp. 139-140.

<sup>36</sup> Lewis, *Paper Tigers: China's Nuclear Posture*, p. 17.

Changes in military technologies globally is a major factor influencing China's nuclear modernization efforts. The United States features prominently in China's nuclear considerations as Washington develops a wide range of conventional technologies that threaten the building and maintaining of a secured second strike force. For decades Beijing has been critical of American attempts to develop missile defence systems of any kind, interpreting such endeavours as an inherent component of nuclear arms-racing to deny other nuclear states a secured second strike capability.<sup>37</sup> Another major concern voiced by some Chinese scholars is the United States acquiring a capability to conduct a disarming first strike with only conventional weapons, thereby not crossing the nuclear threshold and questioning the validity of China's NFU policy if faced with such a reality.<sup>38</sup> These types of conversations became explicit within Chinese strategic policy communities throughout the mid-2000s, with some forcefully advocating amending the NFU policy to include exceptions. To date, however, NFU has been reaffirmed as the main declaratory nuclear policy of China without any caveats.<sup>39</sup>

A number of theories have been proposed to explain China's acquisition of nuclear weapons and their force structure, but few can account for the persistent continuity of their nuclear strategy and force posture over the decades as one of assured retaliation. Structural realism, emphasizing self-help as the governing motivation of states to provide for their own security against one another in an anarchical world<sup>40</sup>, provides a loose explanation for China's determination acquire nuclear weapons in order to balance the other superpowers. It does not, however, account for Beijing's decision to not emulate a Cold War superpower nuclear weapons arsenal or strategy. Technological determinist arguments, on the other hand, positing that China's strategy and force posture are functions of and reflect their limited nuclear capabilities (not vice versa) cannot explain their maintenance despite Beijing's growing technical abilities to develop a radically different force, including in support of other strategies such as mutual assured destruction or asymmetric escalation. Instead, the two main reasons for China's enduring nuclear strategy and posture of assured retaliation are: 1) a distinct strategic culture, particularly influenced by political leaders Mao and Deng, assessing

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<sup>37</sup> George Kulacki, "Chinese Concerns About US Missile Defense," *Union of Concerned Scientists*, July 2014, <http://www.ucsusa.org/sites/default/files/legacy/assets/documents/nwgs/china-missile-defense.pdf>

<sup>38</sup> Shen Dingli, "Nuclear Deterrence in the 21st Century," *China Security* 1 (2005): pp. 10-14.

<sup>39</sup> The omission of any statement regarding NFU in China's 2013 Defense White Paper generated speculation that Beijing was seriously contemplating either revisiting or dismissing their foundational nuclear policy. Such assumptions, however, were laid to rest with the re-appearance of NFU in the 2015 White Paper.

<sup>40</sup> Kenneth N. Waltz, "The Origins of War in Neorealist Theory," *Journal of Interdisciplinary History* 18, 4 (Spring 1998): pp. 615-628.

nuclear weapons to be only effective and needed against deterring nuclear aggression; and 2) the Communist Party's determination to maintain tight centralization of nuclear weapons as part of a broader process to deny delegating authority to lower levels within the Chinese military. These two factors provide greater elucidation of the major characteristics of China's nuclear forces such as: the PLARF reporting directly to the CMC; possession of large megaton weapons on long range delivery platforms instead of miniaturized weapons on short range platforms; and the low level of weapon readiness requiring relatively long lead times to prepare and launch missiles (including missiles and warheads located at different locations) instead of a Launch on Warning footing. Barring significant changes to their security environment, both nuclear and conventional, China will most likely retain their current nuclear policy, strategy and posture, though augmentations quantitatively and qualitatively are expected in their nuclear forces to adjust to new technological abilities possessed by the United States (and more limitedly Russia).<sup>41</sup>

### **Doctrinal, Operational and Technical Challenges**

Changes within its nuclear force composition, regardless of underlying motivations, pose challenges to China's operational doctrine. Perhaps the greatest task for the PLA is creating robust command and control systems to ensure orders are clearly and expeditiously delivered to all relevant units dispersed all over the country as well as an SSBN force that could be deployed far away from Chinese shores. The Central Military Commission, also, does not have a precedent for handing over nuclear forces to other services beyond the PLARF, especially with respect to the PLAN if and when the Jin-Class SSBNs conduct armed nuclear deterrent patrols. Such missions, also, would establish another precedent in operational doctrine: the mating of warheads onto missiles which is in contradiction to China's current force disposition.<sup>42</sup>

The noisiness of these submarines combined with no experience conducting deterrent patrols puts these forces at great risk to the United State and some of her major allies in East Asia which possess superior Anti-Submarine Warfare detection, tracking and prosecuting abilities. It seems counterintuitive that China would pursue a SSBN capability given these vulnerabilities when other nuclear efforts are designed to

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<sup>41</sup> Narang, *Nuclear Strategy in the Modern Era: Regional and International Conflict*, pp. 138-152.

<sup>42</sup> Kristensen and Norris, "Chinese Nuclear Forces, 2015," p. 82.

increase the survivability of their forces.<sup>43</sup> Chinese leaders, however, may be accepting this degree of risk as they assess to be operating in a relatively benign strategic environment affording them the ability to develop such a capability which in the future will advance into a mature and credible leg of their nuclear triad. Non-material motivations, such as enhancing their great power status and prestige, may also play a large role in such procurement decision-making.

Another issue is the fact that the PLARF possesses not just nuclear-capable missiles but a larger, and growing, inventory of conventional ballistic and cruise missile increasingly capable and designed to strike targets out to the First and Second Islands Chains in East Asia.<sup>44</sup> Part of this force includes conventional variants of nuclear missiles, specifically the DF-21D which is a conventional anti-ship ballistic missile.<sup>45</sup> The inclusion of the same missile in both their nuclear and conventional forces creates challenges of clearly delineating which weapons are assigned to which force structure, especially when attempting to decipher which ones are on alert status and/or deployed during a crisis. Little information exists, furthermore, on how the PLARF is organizationally divided into their nuclear and conventional branches, which have very different capabilities and response times. China's conventional missile force is comprised of modern and mobile forces designed to be precise in its targeting which is of a counter-force nature (such as targeting an aircraft carrier at sea) and easily deployed and able to launch on short notice, including pre-emptively. Nuclear forces, on the other hand, are not meant to be precise instruments due to their counter-value targeting missions but are becoming modernized (specifically in terms of being mobile). They remain, though, at a low level of alert and are to be deployed only in a crisis and launched in a retaliator, not a first strike capacity.<sup>46</sup> Confusing China's missile forces, and the expected associated force posture of each may lead to serious misunderstandings for the United States and others and is one of the strongest arguments for Beijing to become more transparent about their nuclear forces to provide a clear delineation between them and their conventional counterparts.

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<sup>43</sup> Kristensen, "Is China Planning To Build More Missile Submarines?"

<sup>44</sup> Anthony H. Cordesman, "The PLA Rocket Force: Evolving Beyond the Second Artillery (SAC) and Nuclear Dimension," *Centre for Strategic and International Studies*, 31 October 2016, <https://www.csis.org/analysis/pla-rocket-force-evolving-beyond-second-artillery-corps-sac-and-nuclear-dimension>; *Military and Security Developments Involving the People's Republic of China*, pp. 22-25.

<sup>45</sup> Kristensen and Norris, "Chinese Nuclear Forces, 2015," p. 79.

<sup>46</sup> Cordesman, "The PLA Rocket Force: Evolving Beyond the Second Artillery (SAC) and Nuclear Dimension," pp. 14-15.



Over the past two decades China has progressed a number of technologies with the potential of radically altering their nuclear force structure, including the testing of a neutron bomb and the recent arming of its DF-5B ICBMs with MIRVs; the latter development some Western commentators assert as evidence of a distinctive shift and/or subtle revealing of a different nuclear strategy and policy than espoused in official correspondence.<sup>47</sup> Unlike, however, American strategic thinking which focuses on agent-based threats (actors with intent and capability to harm them) there is an important strain in Chinese strategic thought which emphasizes threat as conditions rather than specific intentional agents. One of the most consistent and persistent condition is that of 'technical lagging' in which China perceives itself to be vulnerable to intimidation and coercion by more advanced, industrial and military powerful states. Specific military developments, therefore, may not be indicative of a new strategy on the part of Beijing but rather an attempt to reach technological parity with the other major nuclear powers, including understanding the issues and challenges they face (and the risk posed to China) with these capabilities without necessarily incorporating them into their own forces.<sup>48</sup> China has employed some new technologies to increase their nuclear capabilities, such as MIRVs on ICBMs, but they have accepted a large degree of vulnerability to remain in these forces, including keeping the DF-5 series ICBMs in silos.<sup>49</sup> China's nuclear force remains vulnerable to attack by both the United States and Russia, but Chinese leaders have determined these assets are not directly and immediately threatened and in any event are survivable enough to cast doubt in the success of any potential disarming first strike. Such decisions reflect a determination to modernize their future generation of nuclear forces, but not at a breakneck speed to the exclusion of other aspects of its military which are deemed far more important to modernize expeditiously. The focus on conventional missile forces, for example, in their growing size, capabilities, and priority within the PLARF demonstrates a decreasing role for nuclear weapons in China's strategic and military calculations.

### Strategic Implications

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<sup>47</sup> Jeffery Lewis, "China's Belated Embrace of MIRVs," in *The Lures and Pitfalls of MIRVs*, eds., Michael Krepon, Travis Wheeler and Shane Mason (Washington: Stimson Center, 2016), pp. 95-118.

<sup>48</sup> Bin, "Chinese Thinking on Nuclear Weapons"

<sup>49</sup> Lewis, "China's Belated Embrace of MIRVs," p. 110.

There continues to be consistent concerns voiced by the United States regarding lack of details provided by China about its ongoing nuclear weapons modernization plans. For Beijing, continued work in precision conventional strikes and specifically BMD combined by the United States is the primary rationale for their nuclear force expansion and diversification in order to augment the survivability and credibility of its nuclear deterrent. While both states agree that the nuclear balance between them has and continues to play a small role in their overall strategic relationship, in an environment of Western concerns about China's intentions towards and ever growing power capabilities to influence the international order, there is the potential of the nuclear aspect of their relationship moving towards a more hostile and confrontational footing. In order for their nuclear relationship to remain separated from and not influenced by other, larger divisive issues in their ever evolving, complex and complicated great power relationship Washington and Beijing must build and strengthen dialogues and interactions between their nuclear and strategic communities to understand each other's views (and differences) regarding nuclear weapons. This includes terminology, policy, governing philosophies and the rationales and limitations of certain technological developments; the latter a major source of division and mistrust between the two.<sup>50</sup>

Beginning regularly dialogues is an important and worthwhile endeavour for both sides to pursue, and may build a foundation for future formal negotiations and treaties pertaining to nuclear weapons. In moving towards this objective, the United States should accept mutual vulnerability with China at the nuclear level by not attempting to frustrate Beijing's efforts to have a secured second strike capability against them. This will require becoming more transparent about its conventional programs – specifically BMD – and clearly articulating that these are not targeting China's nuclear deterrent. On this matter, the United States has already taken steps to allay Beijing's concerns by declaring their continental BMD system is not capable of inhibiting a Chinese or Russian nuclear attack; a de facto acceptance that a state of mutual vulnerability exists at the nuclear level between them.<sup>51</sup> Washington has been

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<sup>50</sup> Elbridge A. Colby and Abraham M. Denmark, "Nuclear Weapons and U.S-China Relations: A Way Forward," *Center for Strategic and International Studies*, March 2013, <https://www.csis.org/analysis/nuclear-weapons-and-us-china-relations>

<sup>51</sup> Frank A. Rose, Assistant Secretary of State, "Ballistic Missile Defence and Strategic Stability in East Asia" (paper presented at the *Federation of American Scientists'* Workshop on Possible Chinese Interest in Strategic Ballistic Missile Defence, Washington DC, 24 February 2015).

clear, furthermore, that their BMD system is designed for, postured against and capable of responding to rogue states with ballistic missile capabilities (specifically North Korea) and will be tailored to changing realities in these states' missile and nuclear capabilities. The use of other and future missile defence systems, however, must also be explained as possibly employed towards counterbalancing against the ever growing and capable conventional missile arsenal of China, specifically in order fulfill defence treaty obligations with Asian allies.

For China, their ongoing and surprisingly transparent work regarding their own BMD must be clearly explained, particularly if it is meant to better understand the capabilities and limitations of these systems (which may increase their confidence in the difficulties of American systems nullifying the counter-attack power of their nuclear arsenal) or to be employed in their own military defences.<sup>52</sup> Given the large and sophisticated nature of their nuclear forces, the United States is not particularly troubled about Chinese work on BMD but there are concerns Beijing is using the program to advance other more concerning technologies, particularly Anti-Satellite (ASAT) weaponry.<sup>53</sup> China's determination, therefore, to ensure their relationship with the United States separates issues of a conventional versus a nuclear nature is hampered by Beijing's continued opacity with respect to the latter. Chinese BMD developments, whether for purely technological learning reasons or future employment, are not a strategic concern for the United States. They may, however, be for other regional nuclear actors, specifically India which is in the midst of expanding and diversifying its own nuclear forces in which China plays a growing role in these calculations.<sup>54</sup>

The rapid augmentation of its conventional ballistic and cruise missile arsenals - demonstrating the greater importance these forces play in China's security and strategic posture compared to nuclear weapons - is motivating similar force developments in other states.<sup>55</sup> Inspired by the successes of such weapons by the United States in the First Gulf War and interventions in the former Yugoslavia, Beijing has developed a

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<sup>52</sup> Bruce W. MacDonald and Charles D. Ferguson, "Understanding the Dragon Shield: Likelihood and Implications of Chinese Strategic Ballistic Missile Defence," *Federation of American Scientists*, September 2015, [https://fas.org/wp-content/uploads/2015/09/DragonShieldreport\\_FINAL.pdf](https://fas.org/wp-content/uploads/2015/09/DragonShieldreport_FINAL.pdf)

<sup>53</sup> Rose, "Ballistic Missile Defence and Strategic Stability in East Asia," *Developments Involving the People's Republic of China*, pp. 36-37.

<sup>54</sup> MacDonald and Ferguson, "Understanding the Dragon Shield: Likelihood and Implications of Chinese Strategic Ballistic Missile Defence," p. 32; Hans M. Kristensen and Robert S. Norris "Indian Nuclear Force, 2015," *Bulletin of the Atomic Scientists* 71, 5 (2015): pp. 77-83.

<sup>55</sup> The United States has described China's ballistic and cruise missile program as the most active and diverse in the world, exemplified by the rapid increase in its SRBM inventory which has grown from 30-50 in the mid to late 1990s to approximately 1200 currently. National Air and Space Intelligence Center (NASIC), *Ballistic and Cruise Missile Threat* (2013).

robust and increasingly sophisticated conventional missile force able to target American and others regional forces, specifically in the maritime domain, at further distances from China's shores.<sup>56</sup> Through such capabilities, Beijing may believe these forces impart their own deterring effect on American and others' military activities regionally, especially with respect to a number of outstanding regional disputes. Their development, however, of a precise strike capability, which may mature into a global capacity in the next few decades, generates regional concerns of their force vulnerabilities, including the nuclear arsenal of India, in much the same way Beijing is concerned about this capability possessed by the United States towards its own nuclear forces.<sup>57</sup>

Beyond the difficulties of differentiating between technologies of a conventional and nuclear nature, there are concerns within some sectors of the American strategic and academic community of the consequences of the United States' explicit acknowledgement that they are in a mutual vulnerable nuclear relationship with China.<sup>58</sup> While such a declaration would send a political signal of restraint in attempts to overcome this reality, there are reservations about the larger foreign policy behaviour changes Beijing may exhibit as a result of any process formalizing their nuclear relationship. Would allowing China a secured second-strike capability motivate them towards greater transparency and the marginalization of its decades-long strategy of nuclear ambiguity? Or would a mutual vulnerability nuclear relationship with Washington result in what is termed a 'stability-instability paradox' whereby a stable strategic deterrent relationship would enable limited conventional aggression on the part of Beijing in achieving its interests, including regional territorial disputes by force, possibly against American allies?

After months of deliberations, former President Barrack Obama decided not to change Washington's nuclear policy to No First Use. One of the main rationales for maintaining a First Use policy was not the likelihood of a nuclear attack but the

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<sup>56</sup> Cordesman, "The PLA Rocket Force: Evolving Beyond the Second Artillery (SAC) and Nuclear Dimension," pp. 5-7. Another important event motivating Beijing's active and expansion of its conventional missile arsenal was the demonstration of American military power during the 1995-1996 Taiwan Straits Crisis when two American aircraft carrier battlegroups sailed in close proximity to the Chinese coastline deterring further attempts by Beijing to influence the Taiwanese presidential election via military displays of power. This deployment clearly demonstrated China's complete inability to challenge Washington's military primacy in its immediate vicinity. Alastair Ian Johnston, "How New and Assertive is China's New Assertiveness?" *International Security* 37, 4 (Spring 2013): pp. 7-48.

<sup>57</sup> MacDonald and Ferguson, "Understanding the Dragon Shield: Likelihood and Implications of Chinese Strategic Ballistic Missile Defence," pp. 32-33.

<sup>58</sup> Colby and Denmark, "Nuclear Weapons and U.S-China Relations: A Way Forward," pp. VI-VII.

expected negative reaction from allies, specifically in East Asia, which believe such a doctrine is an important check on Chinese revisionism and military aggression as its power and influence grows.<sup>59</sup> Belief that the deterring power of the United States' nuclear forces leverages large, let alone decisive, influence on Chinese actions, however, is to marginalize and discredit the far greater effect conventional force balances, alliances, and decades of regional engagements and policy have on Beijing's thinking and behaviour. How East Asian stability and the security of regional allies would be better served, furthermore, by moves to deny Beijing a secured second strike capability is unclear as such a strategy would increase the probability of arms racing at a nuclear level and an almost certain erosion of the entire relationship between the world's two largest powers and most pivotal players in Asia.<sup>60</sup> As China's conventional capabilities, as well, continue to erode (but not necessarily replace) American military primacy in the region, Washington is faced with the challenge of determining whether this reality is unacceptable and, furthermore, how and to what degree to link conventional force strategies with nuclear ones. For all the uncertainties and escalating tensions in the region, though, these do not equate to a threat towards the national survival of either China or the United States and her allies<sup>61</sup> which would be the primary (and maybe the only politically and morally justifiable) time to use, or threaten to use, nuclear weapons.

### The Need For Political Commitments Over Force Agreements

As power transition anxieties in many ways distort analyses of the changing power relationship between Beijing and Washington<sup>62</sup>, it is becoming increasingly

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<sup>59</sup> Michaela Dodge, "No First Use' Nuclear Weapons Policy a Dangerous Obama Idea," *New York Times*, 1 August 2016; Hugh White, "The Strategic Illusion of a No First Use Policy," *East Asia Forum*, 22 October 2016.

<sup>60</sup> Grompet and Saunders, "Mutual Nuclear Restraint," pp. 84-88.

<sup>61</sup> Though China has many disputes with various neighbours over territorial possession of a number of islands/islets and their surrounding waters in the East and Sea China Seas, these claims and Beijing's efforts, including militarily, to establish defacto ownership via effective occupation do not constitute an existential threat to the survival of the other claimants or the region. These actions, furthermore, may be in support of a revisionist challenge over regional leadership by changing the balance of power but is not an endless pursuit of territorial aggrandizement or occupation of other states which would, if real, possibly justify nuclear weapons use by Washington under its Extended Deterrence arrangements to Asian allies. To paraphrase Brantly Womack, these disputes are best described as Beijing stepping on their neighbours' toes, not their necks. Brantly Womack, "China and the Future Status-Quo," *Chinese Journal of International Politics* 8, 2 (2015): pp. 115-137.

<sup>62</sup> Graham Allison, "The Thucydides Trap: Are the U.S. and China Headed for War?" *The Atlantic*, 24 September 2015; Stephen G. Brooks and William C. Wohlforth, "The Once and Future Superpower," *Foreign Affairs*, May/June 2016.



necessary to clearly define and delineate the circumstances and conditions in which nuclear weapons would or would not be used. While the United States remains by far the most dominant and only truly global power, the rise of China is altering the balance of power between the two and as a result as major contributing factor transforming the international system away from unipolarity but towards an uncertain future. Within such an environment, neither hegemonic or chaotic, Washington and China, as the two most powerful states in the international system, must continue to reflect on and clearly stipulate the red lines for each that unacceptably threatens their core interests in order to ensure their strategic relationship remains stable. Though Arms Control matters remain an exclusively America and Russian endeavour, and China not willing to participate in such negotiations even if they were invited, regular discussions and joint agreements of a limited nature are increasingly becoming relevant and prudent to ensure their nuclear relationship remains isolated onto itself and applicable only in the highly unlikely event that one threatens the existence of the other. Within such a reality, offering reassurances to the other and cementing these commitments through bilateral agreements would help alleviate mistrust and misunderstandings populating and influencing their nuclear relationship.

One possible avenue may be a bilateral No First Use agreement between the two which would lock their nuclear forces into strictly deterrent roles, only be used if one broke the agreement and launched a nuclear first strike against the other. Such an agreement may generate some unease with Asian allies but the United States could ensure the wording respected its Extended Deterrence commitments and allow Washington to not (if they desired) publicly declare a mutual vulnerable nuclear relationship exists with China. The deal, also, would afford Washington the flexibility to maintain their First Use policy with this sole exception. China would receive the guarantee that its nuclear forces would not be targeted (except if Beijing initiated nuclear hostilities), especially during any period of conventional conflict between the two and would therefore allow them to keep some of their forces vulnerable including its silo-based ICBMs and emerging SSBN fleet. Beijing, as well, would not be forced to entirely lift the veil of opacity over their nuclear forces but simply agree to their nuclear balance as one confined to and not influenced by other aspects in their relationship. A joint NFU policy towards the other, furthermore, would marginalize concerns China has of any possible nuclear blackmail employed by the United States towards them. This may be even more of a concern given President Trump's musing about the purpose of nuclear weapons and suggestions of an arms race to maintain superiority.<sup>63</sup> Such commentary, while not directed towards any specific state, seems to suggest that

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<sup>63</sup> "Trump Wants to Make Sure US Nuclear Arsenal at the 'Top of the Pack'", *Reuters*, 24 February 2017.



either the American President does not believe deterrence and nuclear vulnerability are acceptable conditions to exist in and/or that nuclear weapons should be used as diplomatic coercive tools employed in issue areas beyond those related to national survival (the logic of why have them if you cannot use them).

A bilateral NFU declaration, as well, would signal a determination by China and the United States to diffuse any possible nuclear arms racing between them in support of their joint commitment as recognized Nuclear-Weapon States (NWS) under the NPT towards the reduction of and eventual complete disarmament of nuclear weapons globally.<sup>64</sup> Modernization efforts by Beijing and Washington (along with the other NWS) indicate nuclear weapons will continue to be part of the international landscape into the foreseeable future<sup>65</sup>, but measures to restrict quantitative and qualitative augmentations of the United States' and China's nuclear forces would be productive. There is, also, a growing congruence of interests between China and the United States over limiting horizontal proliferation. After decades of estrangement punctuated by incidents of outright undermining the non-proliferation regime (such as warhead design transfers to Pakistan), as China emerges as a great power they have become a member and strong supporter of nearly all non-proliferation related international institutions, including acceding to the NPT in 1992 and signing the Comprehensive Test Ban Treaty in 1996.<sup>66</sup> With North Korea's ongoing nuclear efforts compromising Chinese security and status in the region, deterring North Korean aggression and nuclear blackmail along with eventual nuclear disarmament on the Korean Peninsula are shared goals between Beijing and Washington, though major differences exist towards how to achieve these and the wider geopolitics surrounding any possible action to engineer a North Korean regime change.<sup>67</sup> Shared interests of denying entry into the nuclear club to new entrants, also, forces China to acknowledge the restraining role American Extended Deterrence has in part played towards halting further proliferation in East Asia, especially amongst nuclear weapon capable states like Japan and South Korea. China, located within a tough geopolitical neighbourhood densely populated by other nuclear states, is opposed to further regional proliferation and thus must accept these American military commitments, while conventionally posing a challenge to them, as having contributed positively to these efforts.

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<sup>64</sup> This pledge is captured in Article VI of the Treaty. International Atomic Energy Agency (IAEA), *Treaty on the Non-Proliferation of Nuclear Weapons*, 22 April 1970.

<sup>65</sup> SIPRI, *Trends in World Nuclear Forces*, 2016.

<sup>66</sup> Nuclear Threat Initiative, *China*, April 2015.

<sup>67</sup> Adam P. MacDonald, "From Strategic Buffer to Strategic Liability: China's North Korea Dilemma," *Conference of Defence Associations Institute (CDA)*, 14 April 2016.

The United States should accept mutual vulnerability with China by not frustrating any attempts by Beijing to build a secured second strike force; consider a bilateral NFU commitment to reduce the risk of their nuclear relationship becoming a security dilemma; and continue to ensure a clear demarcation is established between nuclear force matters and the areas they apply to (ideally solely for national survival) and those of a conventional nature. For their part, China, in exchange for declaratory assurances made by the United States not to undermine their nuclear forces and possible entry into a bilateral NFU commitment, needs to become more transparent about its nuclear force structure and technological undertakings. In particular, Beijing must become cognizant of the fact that specific activities, such as a rudimentary BMD and conventional precision strike, being pursued are generating trepidations in other states, most notably India, in much the same way that China is concerned about these same projects the United States is progressing. These efforts will assist in ensuring the nuclear arena remains largely non-confrontational and non-escalatory and does not influence or become influenced by other more divisive and sensitive factors within the wider Sino-American relationship which is becoming more complex and complicated as the two adjust to one another in terms of power reconfigurations and resultant altering international landscape.

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