

ASSURED RETALIATION: MAKING SENSE OF THE CHINESE NUCLEAR DOCTRINE

Rizwan Zeb*

Ali Khan Ghumro†

Abstract

Employing the qualitative and historical analysis method, this paper overviews the Chinese nuclear doctrine and how it has evolved over the years with particular focus on the Chinese policy of 'no-first use of nuclear weapons' and its future. This paper argues that to understand the role assigned to the nuclear weapons in the Chinese defense policy, one must comprehend Chinese strategic thinking and where does nuclear weapons lie in this thinking. The paper further argues that for a better understanding of Chinese strategic thinking, it is imperative to be cognizant of the strategic language and vocabulary used by the Chinese strategic thinkers. The paper also analyses the command and control set up for the Chinese nuclear weapons and the American assessment of the Chinese nuclear capability. The argument put forth is that the American assessment of the Chinese nuclear capabilities is mostly exaggerated as it has security implications for American interests regionally and globally. The paper also argues that despite new emerging threats in the technological domain, China would continue pursuing the policy of no first use in the foreseeable future.

Key Words: *Chinese nuclear doctrine, No-First Use, strategic thinking, command and control, nuclear weapons.*

INTRODUCTION

According to one estimate, China has 350 nuclear weapons as compared to almost 4000 American warheads yet Washington is

*Associate Professor, Air War College Institute, Karachi email: srizwanzeb@gmail.com (Corresponding Author).

†Assistant Professor, Department of International Relations, University of Sindh, Jamshoro.

projecting China as a threat to global peace and stability. As per the Nuclear Non-Proliferation Treaty (NPT), China is among the five legally recognized nuclear weapons states. It tested its nuclear weapon in 1964. From the very first day, it has followed a 'no-first use policy'. Despite several changes in the global order, China continued to adhere to it. For China, nuclear weapons are weapons of self-defense. Beijing has made it clear that it will only use them if it is attacked and in self-defense. In this way, one could argue that the Chinese nuclear doctrine is of assured retaliation.

This paper aims at making a sense of the Chinese strategic thinking and the role of nuclear weapons in it. Based on this, then the paper attempts to dilate the main contours of the Chinese nuclear doctrine and its command and control set up. The paper employed the qualitative and historical analysis method. An empirical analysis of the available literature (books, newspapers, journals and documentaries etc.) was conducted. The paper also incorporated data and information gathered from various sources such as government reports, official statements and speeches etc.

The paper has four parts: part one scans through the Chinese strategic thinking and language and where does nuclear weapons lie in this discourse. The second part provides details about Chinese nuclear doctrine with its key elements and points. The third part gives details of the nuclear command and control set up of China. The fourth section overviews the American assessment of the Chinese nuclear capabilities as its main challenger and adversary for the top slot in global politics. This is followed by the conclusion section that sums up the paper as well as critically analyses questions such as emerging challenges to Chinese nuclear weapons and whether Beijing would be able to continue its no-first use of nuclear weapons policy in future.

CHINESE STRATEGIC THINKING AND VOCABULARY

One of the major hurdles that any researcher working on the Chinese strategic thinking and security discourse especially the nuclear doctrine faces is the issue of the particular language and its meaning. Most of the Strategic studies literature is in English language and the analysts and researchers across the world are so accustomed to using and comprehending the terminologies as they are within the everyday usage in the literature that they assume that it is universally applicable. However, when one looks at the Chinese strategic discourse, one realises that it might not be the case. And this creates another layer of complication in making sense of the strategic language and discourse as emanating from China.

Over the years, several China watchers have highlighted the need to develop an understanding of this aspect for a better comprehension of the Chinese strategic discourse. With this foregone in mind, in the coming lines, a few basic elements of Chinese strategic and nuclear terminologies and their literal or closer meanings in the English language are discussed so that a better understanding of the Chinese discourse is developed. Li Bin in an authoritative article on the subject stated that unlike the English language in which security denotes measures against damage caused by an attack and safety implies avoidance of damages resulted by occurrences such as accidents and natural calamities, in Chinese language, security as well as safety are capsulated in a single word “*anquan*” (Li Bin, 2015).

This understanding of the Chinese word ‘*anquan*’ is important to make sense of when the Chinese highlight security issue as their thinking of security terms are different. Once, one has this understanding of the Chinese security thinking, it is easy to fathom that for the Chinese concept of security encompasses both non-military and military aspects of security. For Beijing based on the Chinese historical experience, challenges to Chinese security are far more important than the actors posing these challenges. This could be

substantiated by the fact that several Chinese documents including its national defence whitepaper identify certain situations such as lagging behind other countries in the field of science, technology, military and economic development as a threat or a challenge that they must address and overcome. Lin Bin quoting the 2008 defence paper states: one the biggest challenges or fear that the Chinese have is of lagging behind in any field be it in economic, science and technology, and military affairs from other countries (Li Bin, 2015). This is another factor that must be kept in mind if one needs to understand the Chinese strategic culture and thinking. Unlike the western countries, where security threats are normally external and in exist mostly in the military domain, in China these could be internal and might exist in both military and non-military domains.

Chinese understanding of what constitutes and entails deterrence and its linkage with related concepts such as 'compellence' is different from how these concepts are understood in the western countries or the most commonly used security studies and nuclear affairs literature and discourse. Deterrence in the western literature on nuclear affairs, in essence is defensive. This set of literature differentiates between deterrence and compellence. According to this literature, if state A decides not to attack state B due to state A's nuclear capability, it is deterrence at work. In contrast, if State A that has nuclear weapons and in this backdrop compels State B to take a certain action that it otherwise would not have taken, its compellence. However, the Chinese view on this is different. For them, there is hardly any difference between the two. In fact, the word that denotes deterrence in the Chinese language is '*Weishe*', which is translated into English as 'coercion'. For Beijing, deterrence is more about compellence. It is this understanding why Beijing has opted for a no-first use nuclear posture and a declaratory policy of using nuclear weapons only in defensive role and for a retaliatory attack. This according to the Chinese strategic thinkers minimises the compellence effect of the nuclear weapons (Li Bin, 2015).

Arms race, for most of the Western world particularly USA, is “usually about the security dilemma; when the Chinese talk about an arms race, it is always about global hegemony. In Chinese eyes, the nuclear arms race between the Soviet Union and the United States during the Cold War was driven mainly by the two countries’ ambitions for global hegemony” (Li Bin, 2015). Same applies to the Chinese understanding and usage of terms such as strategic assurance, reassure and stability. Although the subject of Chinese strategic language in itself is a very important subject and must be explored in detail, however, that is beyond the scope of this paper. However, the examples highlighted above are suffice to make the point that to make sense of Chinese nuclear doctrine, command and control set up and future challenges, a clear understanding of this aspect is important. With this perspective in mind, it is imperative to look at the role and task assigned to the nuclear weapons in the overall Chinese strategic and military thinking.

The Role of Nuclear Weapons in Chinese Strategic Thinking

To make sense of any discussion on the Chinese nuclear doctrine, one first needs to understand how nuclear weapons are viewed and what role is assigned to them in the overall Chinese strategic thinking. Chinese strategists view nuclear weapons of limited and limiting utility as compared to conventional weapons and forces that provide flexibility in achieving military objectives. A considerable part of the strategic leaders in China believe that wars are and would continue to be won and lost in the conventional domain (Chase, 2017; Zhao, 2016). If one takes a holistic view of Chinese strategic thinking, one can surmise that the PLA is assigned the task of winning what have been termed as partial wars. And most important role in such war fighting is to be done by the conventional forces. Despite its growing global outreach, so far, it appears that the PLA is more focused on fighting smaller, localized battles and conflicts particularly in the maritime domain in the east and south China seas (Fravel, 2015). Historically although nuclear weapons have remained an important

part of Chinese national security, these were never considered the most integral part of it. During its initial phase, Chinese nuclear arsenal was considered to be a tool to counter any nuclear blackmail but over the years, it has translated into a strategy of minimum deterrence. The nuclear weapons for the Chinese defense planners are to deter an enemy's nuclear strike on China. To achieve this, China needs an effective and leaner nuclear deterrent aimed at countering any nuclear coercion (Fravel, 2019). Hence, it is argued that the Chinese nuclear doctrine can best be understood as a doctrine of assured retaliation implying that it aims at denying any aggressor (read USA) to either conduct a nuclear attack against China or if a nuclear strike occurs, survive it and retaliate with an unacceptable damage to the adversary (Cunningham, 2015). This is the logic behind the Chinese decision not to seek parity with any adversarial nuclear state.

Instead Beijing aims at maintaining a modest yet survivable nuclear arsenal. It is this line of thinking that made China to publically announce and adhere to policy of universal no-first use (NFU) often described in the literature as a self-defense nuclear strategy or a policy of counterattack in self-defense (PCR State Council, 2006). An in-depth scrutiny of the Chinese literature on the subject brings to fore three roles for the Chinese nuclear weapons: first, to deter its enemies from using nuclear weapons against it; if war does occur, nuclear weapons should discourage any adversary to escalate from conventional to nuclear; and lastly, if it comes to a nuclear level, conduct nuclear counter attacks. (Chase, 2017) this is also reflected in the training of the nuclear forces (US Office of Sec. Defence, 2020).

“China's Military Strategy”, a Chinese government white paper lists the following five key roles that the Chinese nuclear weapons play in the Chinese strategic and security calculus (Miou, 2015):

1. To serve as an ultimate guarantor of Chinese national security and sovereignty and security.

2. China follows and would continue to follow a policy of no first use and would not threaten to use nuclear weapons against non-nuclear-weapon states or in nuclear-weapon-free zones.
3. China would not become a part of a nuclear arms race.
4. China would maintain its minimum credible nuclear posture and would ensure that its nuclear capabilities are kept at the minimum level required for maintaining its national security.
5. To ensure the nuclear deterrence remains intact and effective, China would take all necessary measures to keep its command and control as well as other important aspects of its nuclear weapons program up to date.

In retrospect, it could be argued that the adoption of a universal no-first use policy has worked for China (Zhao, 2021). At the time when the US-Soviet nuclear rivalry was raging and the world was held hostage to a looming nuclear threat, China's decision to voluntarily adopt a universal and unconditional no-first use policy not only provided it a moral high ground it also was in sync with its understanding and projection of nuclear disarmament as a key objective and the nuclear arms control. It holds the position that the NFU is the logical first step towards the ban of the use of nuclear weapons and an ultimate ban of nuclear weapons itself. NFU is also considered as a helping tool in reducing the chances of a nuclear exchange/ war.

Looking at the Chinese NFU through a purely realistic lens, one could see that this was the most practical policy option for China in keeping with the dynamics of cold war. As a comparatively smaller nuclear weapon state, it opted for an option that suited its overall strategic calculations and thinking. A number of nuclear experts have noted that the veracity and seriousness of a state's no-first use of nuclear weapons can be gauged using several aspects that are involved in its nuclear posturing. They point that if a country opts for a NFU, its

force posture, including size, configuration, and readiness, would be considerably different from that of a state that adheres to a policy of first use. They further state that for a country following no first use, the nuclear forces would be much smaller in size and the alert status of such forces would much lower in comparison with those that have a first use policy. Now, if China is scrutinized using this criteria, one finds that China has and continues to maintain a smaller nuclear arsenal as compared to its so-called adversaries and all exiting data points to fact that its nuclear warheads are not mated with the delivery systems. This is further corroborated by the fact that the Second Artillery Force, a force especially designed for this purpose has always war gamed and conducted ear training with this point that how it would execute the assigned task to it once a nuclear first strike has taken place and China has absorbed it and now it is time for it to retaliate with its nuclear weapons. All the above mentioned points highly add to the credibility of Chinese no-first use pledge and grant it credence. Zhang has added another point to it: "The increased stockpiling of China's conventional missiles by the Second Artillery could further enhance the credibility of its no-first-use pledge" (Zhang, 2012).

In keeping with the more recent and emerging challenges, a group of strategic thinkers has raised their voice that Beijing must also factor in the possibility of a conventional strike on its nuclear installations to neutralize them in its nuclear strategy and declaratory policy (Twomey, 2021). However, despite the recent proclamation by Admiral Davison that the gravest dangers for the USA and its allies in the region is the "erosion of conventional deterrence vis-à-vis China," the chances that Beijing might review its no-first use (NFU) are remote and highly unlikely.

Chinese Nuclear Doctrine

As per a Chinese government issued white paper that was first publically available government document on nuclear strategy:

China's nuclear strategy fundamental goal is to deter other countries from using or threatening to use nuclear weapons against China. China remains firmly committed to the policy of no first use of nuclear weapons at any time and under any circumstances, not to use or threaten to use nuclear weapons against non-nuclear-weapon states or nuclear-weapon-free zones, and stands for the comprehensive prohibition and complete elimination of nuclear weapons. China upholds principles of counterattack in self-defense ...to ensure the security and reliability of its nuclear weapons and maintains a credible nuclear deterrent force. China's nuclear force is under the direct command of the Central Military Commission (CMC). China exercises great restraint in developing its nuclear force. It has never entered into and will never enter into a nuclear arms race. (FAS guide, 2006)

Prevalent Perspectives on Chinese Nuclear Doctrine

According to James Mulvenon, Chinese nuclear strategy was initially based on existential deterrence graduating to minimal and later into credible minimum deterrence. According to Mulvenon (2006) China has tilted towards limited deterrence aimed at capsizing escalation of the conflict. At present, any discussion of Chinese nuclear doctrine can be understood through four different perspectives: it is a doctrine based on self-defense; it is a doctrine based on the principle of minimum deterrence; it is a doctrine on counter attack aimed at countering nuclear coercion; it is a doctrine based on limited deterrence. The common elements in these perspectives are the need to maintain a second strike capability and a commitment to no-first use. If one looks at these perspectives closely, it is realized that all these perspectives cover broadly speaking more or less the same principles. For instance, according to Sun Xiangli the perspective that defines the Chinese nuclear doctrine as a doctrine of self-defense focuses on China's no-first use commitment and its resolve to

maintain an effective limited nuclear force (Xiangli, 2006). The perspective that maintains that is a doctrine of minimum deterrence focuses on developing an understanding with other nuclear states by using the same terminology with regards to nuclear deterrence and points to Beijing's resolve not to use nuclear weapons as an aggressor and only use them as a defensive weapon against its enemies who have struck it first with a nuclear bomb (Yunzhu, 2009). The third perspective in the words of Li Bin focuses on countering nuclear coercion. (Lin, 2006) The fourth perspective argues that it is a doctrine of limited deterrence arguing that in keeping with the more recent developments, Beijing would keep on improving it (Yan, 2004).

Key elements of Chinese Nuclear Doctrine

The Chinese nuclear doctrine could be divided into five main parts for better comprehensive understanding. In other words, it has five key elements (D4E)[‡]: first, China strictly adheres to the no first use (NFU) policy and that self-defense is the sole purpose of the Chinese nuclear weapons. As the main objective of the Chinese nuclear weapon is to deter adversarial states from launching a nuclear strike against China, *second element* is the development of a purpose built lean and effective nuclear force that sends the right signals to adversarial state. As China follows a no first use policy, the third element of its nuclear doctrine is to build and maintain a credible second strike capability. This could be illustrated by projects like the underground great wall, DF-31 and DF-31 missiles and SSBN development. This also explains why it is a firm believer and advocate of nuclear disarmament. This is the fourth key element of the Chinese doctrine. The fifth and final element is the employment which could be better understood in light of the D4 elements.

Chinese Nuclear Command and Control

Not much is publically available on the Chinese nuclear command

[‡] D4= Deceleration, development, deployment and disarmament. E= employment

and control set up. What little is available is mostly based on western sources (Cunningham, 2019). Therefore, one cannot be 100 percent confident of its reliability and objectivity. However, in keeping with the limitation of the source material on the subject, this section relies on it.

As per the Federation for Atomic Scientists, the ultimate launching a nuclear attack authority lies with the chairman or head of the Chinese Central Military Commission (CMC). According to an official Chinese government issued white paper, the top tier of the Chinese nuclear command and control is the Central Military Commission (CMC). (Information office of the state council of PRC, 2009) CMC is headed by the Chinese president. The actual go-ahead for a nuclear strike or launch has to come from the Central Military Commission (CMC). Once the CMC decides and gives a go ahead, it is communicated to the role specific Second Artillery now the People's Liberation Army Rocket Force (PLARF) via the CMC Joint Operations Communication center. The PLARF headquarter then passes it down the chain of command for the actual strike or launch. (Nautilus.org)

To achieve the objective of the survivability and security of the Chinese nuclear weapons as well as its command and control setup, Beijing has extensively invested in developing the necessary infrastructure including underground C2 facilities that are able to operate and communicate with the relevant forces in case of a war. Although it is believed that the Chinese nuclear weapons are not equipped with the PALs yet a strict set of rules and procedures are in place that minimizes the chances of a theft or an unauthorized use. Chinese experts are continuously working on further improving it in keeping the emerging advancement in the field and challenges. According to a Federation of Atomic Scientist report:

C4I modernization and automation has been a top Chinese priority since 1979. This produced a command automation data network capable of rapidly passing operational orders down the chain of command and moving information to

national and theater level decision makers... PLA has made progress in modernizing its C4I system, completing an automated command and control system, developing a new type of general field communications system, and disseminating new general signal regulations (fas.org)

However, as it is evident from recent developments that the Chinese are leading the technological race especially in the cyber domain, one could argue that, it would be a fair assumption that this technological advancement has also contributed to its C4I. Recently, several reports emanating from the western think tanks suggested that Chinese are extensively working on and have made strides in developing Integrated Battlefield Area Communications System (IBACS). These would have a positive impact on further strengthening of the Chinese C4I.

American Assessment of the Chinese Nuclear Weapons Program

As a global power who until recently enjoyed the status of the sole super power, USA is concerned about China's rise. Recently a lot has been written about this. Graham Allison termed the Sino-American predicament as a Thucydides Trap. America monitors Chinese nuclear development closely and extensively. However, when one looks at the American reports on the subject, it becomes obvious that these are barring few, mostly alarmist and projecting an exaggerated estimate of Chinese nuclear development and capabilities.

In the 2020, nuclear notebook, Hans Kristensen has reported that Chinese have "a stockpile of approximately 350 nuclear warheads, of which roughly 272 are for delivery by more than 240 operational land-based ballistic missiles, 48 sea-based ballistic missiles, and 20 nuclear gravity bombs assigned to bombers. The remaining 78 warheads are intended to arm additional land- and sea-based missiles that are in the process of being fielded". Whereas the US Defense Intelligence Agency as early as 1984 has claimed that China had about 360 nuclear weapons and claimed that this number will rise to 800 in a decade.

Ironically in its 2019 estimate, the Defense Intelligence Agency claimed that this number could be in couple of hundreds. According to Hans Kristensen the US government including its commander US Strategic Command in February and Pentagon in a recent annual report to Congress projected that China have less than 500 nuclear warheads by 2020s. whereas Admiral Philip Davidson, commander of the US Indo-Pacific Command, told Congress in April 2018 that the “PLA Rocket Forces maintain a high degree of combat readiness” , and The latest Pentagon report also confirmed readiness and assigning a missile battalion to be ready to launch for unspecified periods of time.

Washington has also repeatedly questioned the credibility of Beijing’s ‘no first use policy’. American strategic community is of the view that the Chinese would use its nuclear capability for coercion and black mail and breaking their no-first use pledge if it serves their purpose. The Commander of the American Strategic Command while testifying to the Congress in February 2020 stated that he could “drive a truck through that no-first-use policy.

Austin Long has identified four implications of the emerging Chinese nuclear posture for the USA: first, any strategic dialogue that takes place on issues related to nuclear proliferation and arms control etc., from now onwards has to include China along with Russia. Second, with the inclusion of China, the nuclear factor in the great-power rivalry and competition is further complicated and the US strategic planners have to factor it in its future projection and analysis. Third, the role of nuclear weapons in deciding the outcome of this rivalry has increased manifold. Fourth, the Americans are skeptical about Chinese nuclear doctrine and believe that the Chinese are intentionally keeping it opaque and vague. They argue that Beijing’s nuclear policy and posturing has dramatically evolved and changed in the last decade and this trend would continue in the future and that Washington must take a note of this (Long, 2021).

Estimated Chinese Nuclear Forces 2020

As of 2020, the U.S. Defense Department (DoD) estimates that China's "operational" stockpile of nuclear warheads numbers in the low-200s. The DoD also notes that "China almost certainly keeps the majority of its nuclear force on a peacetime status—with separated launchers, missiles, and warheads..." Independent researchers Hans Kristensen and Matt Korda with the Federation of American Scientists estimate the total stockpile could be larger, possibly around 270 warheads, based on the number of available missile launchers. They also estimate that another 78 warheads "have been produced or under production for weapons in the process of being fielded—including DF-41 land-based intercontinental ballistic missiles and two additional strategic submarines—for a total stockpile of approximately 350 warheads" in the near future. The following table describes fielded nuclear systems, as well as those still under development or in production (which are listed below in *italics*).—ACT

	No. of launchers	Year deployed	Range (km)	Warheads and est. yield (kt)	No. of Warheads
LAND-BASED BALLISTIC MISSILES					
DF-4	6	1990	5,500	1 x 3,300	6
DF-5A	10	1991	12,000	1 x 4,000–5,000	10
DF-5B	10	2015	13,000	5 x 200–300	50
<i>DF-5 C</i>	?	<i>(2020)</i>	<i>13,000</i>	<i>(multiple)</i>	?
DF-15	?	1990	600	?	?
<i>DF-17</i>	<i>(18)</i>	<i>(2021)</i>	<i>1,800+</i>	<i>1 x hypersonic glide vehicle</i>	?
DF-21A/E	40	2000, 2016	1,750–2,150	1 x 200–300	40
DF-26	100	2016	4,000	1 x 200–300	20
DF-31	6	2006	7,200	1 x 200–300	6
DF-31A	36	2007	11,200	1 x 200–300	36
DF-31AG	36	2018	11,200	1 x 200–300	36
<i>DF-41</i>	<i>(18)</i>	<i>(2021)</i>	<i>12,000</i>	<i>(3 x 200–300)</i>	<i>(54)</i>
SUB-BASED					
JL-2	4 subs, 48 launchers	2016	7,000+	1 x 200–300	48
	<i>(2 subs, 24 launchers)</i>	<i>(2021)</i>	<i>7,000+</i>	<i>1 x 200–300</i>	<i>(24)</i>
AIRCRAFT					
H-6 Bomber	20	1965/2009	3,100+	1 x bomb	20
TOTAL	312 (372)				272 (350)

Adapted from "Nuclear Notebook: Chinese nuclear forces, 2020," by Hans M. Kristensen and Matt Korda in *Bulletin of the Atomic Scientists*, pp. 443–457, Dec. 10, 2020

CONCLUSIONS

This paper attempted to make a sense of the Chinese nuclear doctrine and how it has evolved over the years and its future projection. For this an attempt was made to situate the nuclear weapons in the overall strategic thinking and discourse of China. The paper highlighted that the foremost important thing to understand is the use of different strategic language and vocabulary by the Chinese that has its roots in its distinct history, philosophy and culture. It was stated that this lack of understanding of how a certain situation and terminology is understood, explained and analysed could be problematic in developing an understanding and a common nuclear narrative. Although in recent years, a number of Chinese strategic thinkers have expressively started using the language of nuclear deterrence as understood in US and other western countries yet it is still infancy.

China is the only country that has a declared no first use of its nuclear weapons policy and that has a nuclear doctrine based on the principle of self-defence. As amply highlighted in this paper, the Chinese doctrine grounded in the policy of defensive use of nuclear weapons as demonstrated in its policy of no-first use, the only scenario in which one can surmise a nuclear strike by Beijing is if it is first

attacked by a nuclear adversary. Since 1960s when China became nuclear till today, China continues to follow this policy and the likelihood of this changing in the near to mid-term future are remote although several questions remain. In the last few years, China has advanced exponentially in the technological domain with visible effects on its nuclear arsenal. It is working on advance missile systems as well as submarine force that would add to its nuclear capability and confidence.

Several scholars have highlighted that as China is expanding its global outreach and influence especially since the initiation of the One Belt One Road Initiative (BRI), a Sino-US clash is inevitable. Graham Allison described this as the Thucydides trap. The growing suspicion against each other's intentions and designs, American muddling in South China sea, issue of Taiwan, projection of India as a counter-weight to China, renaming of the Pacific command to the Indo-Pacific command, the reinstatement of the Quadrilateral security dialogue (Quad) and the adoption of an increasingly alarmist approach towards China's nuclear intentions and military modernization programs are just a few manifestations of the growing distrust between the two.

How would this effect Chinese nuclear doctrine and whether China would be able to continue its no-first use pledge is a question that is hotly debated in China as well as in the west. How would China react to an attack on its nuclear installations including the nuclear command centres using high precision conventional means? With the advancement in conventional military capability, the chances of entanglement and cross-domain escalation would increase. A cyber-attack, for instance a malware and virus attack on the Chinese nuclear command centres would also have serious implication for China. How would China respond to wormhole escalation challenges? In case of a first strike by the United States, China needs to develop missiles that could penetrate the American missile defences and target the American mainland. While the Chinese would not intend

to maintain or achieve parity with the USA, it would continue its focus on maintaining and further developing its assured retaliatory capability if attacked by the US.

To sum it up, while the Chinese would continue the advancement of its nuclear weapons and technologically continuously improving it yet Beijing's no-first use pledge of its nuclear weapons would continue to remain the cornerstone of the Chinese nuclear policy.

REFERENCES

- Austin, L. (2021). Myths or Moving Targets? Continuity and Change in China's Nuclear Forces, *War on the Rocks* Retrieved from <https://warontherocks.com/2020/12/myths-or-moving-targets-continuity-and-change-in-chinas-nuclear-forces/>
- Bin, L. (2015). Chinese Thinking On Nuclear Weapons, *Arms Control Today*. Retrieved from <https://www.armscontrol.org/act/2015-12/features/chinese-thinking-nuclear-weapons>
- Chase, M. E. (2017). PLA Rocket Force: Executors of China's Nuclear Strategy and Policy. In J., McRynolds (ed.). *China's Evolving Military Strategy*, Washington: The Jamestown Foundation.
- Chong, L. (2016). The Relationship between Nuclear Weapons and Conventional Military Conflicts. In L., Bin and T., Zhao (eds.). *Understanding Chinese Nuclear Thinking*. Washington: Carnegie Endowment for International Peace.
- Cunningham, F. (2019), Nuclear Command, Control and Communications Systems of the People's Republic Of China, *NAPSNet Special Reports*, Retrieved from <https://nautilus.org/napsnet/napsnet-special-reports/nuclear-command-control-and-communications-systems-of-the-peoples-republic-of-china/>

Cunningham, F. S. & Fravel, M. T. (2015). Assuring Assured Retaliation: China's Nuclear Posture and U.S.-China Strategic Stability. *International Security* 40 (2), 7–50. DOI: https://doi.org/10.1162/ISEC_a_00215

Information Office of the State Council (2009). China's National Defense in 2008. Beijing: Information Office of the State Council of the People's Republic of China

Information Office of the State Council (2006, December 29). China's National Defense in 2006. Information Office of the State Council of the People's Republic of China, Retrieved from <http://fas.org/nuke/guide/china/doctrine/wp2006.html>

Kristensen, H. (2010). Nuclear notebook 2020. Retrieved from <https://thebulletin.org/premium/2020-12/nuclear-notebook-chinese-nuclear-forces-2020/>

Mulvenon, J.C. (2006). *Chinese Responses to U.S. Military Transformation and Implications for the Department of Defense*. Santa Monica, CA: RAND Corporation.

Song, M. (2015). Full Text: China's Military Strategy, *Xinhuanet*, http://news.xinhuanet.com/english/china/2015-05/26/c_134271001_4.htm

_____(2005, July 7). Statement by Ambassador HU Xiaodi at the Plenary of the 2nd Part of the 2005 Session of the Conference on Disarmament at the Permanent Mission of the People's Republic of China to the United Nations Office at Geneva Retrieved from <http://www.china-un.ch/eng/cjjk/cjthsm/t202868.htm>

Twomey, C. P. (2021). China's Nuclear Doctrine and Deterrence Concept. In J. Smith & P. Bolt (eds.). *China's Strategic Arsenal: Worldview, Doctrine, and Systems*. Washington: Georgetown University Press.

- U.S. Office of the Secretary of Defense (2020). Military and Security Developments Involving the People's Republic of China, Retrieved from <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>
- Xiangli, S. (2006). China's Nuclear Strategy: Nature and Characteristics, *World Economics and Politics*. https://en.cnki.com.cn/Article_en/CJFDTotalsJJZ200609004.htm
- Yan, G. (2004). From Local War under the High-Tech Conditions to the Assured Destruction Under Nuclear Situation—China's Current Military Strategy Should Turn to the Comprehensive Nuclear Deterrence, *Tianya Forum*, Retrieved from: <http://bbs.tianya.cn/post-worldlook-101455-1.shtml>
- Yunzhu, Y. (2009). China's Perspective on Nuclear Deterrence, *Air & Space Power Journal* 23 (4) <<https://go.gale.com/ps/i.do?id=GALE%7CA223907817&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=1555385X&p=AONE&sw=w&userGroupName=anon%7E8cf0071b>
- Zhao, T. (2021). China and the international debate on no first use of nuclear weapons, *Asian Security*, DOI: 10.1080/14799855.2021.2015654