SVI | STRATEGIC VISION INSTITUTE

Monograph Series, No 2

Emerging Global Nuclear Dis-Order?

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August 2023

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Abstract

The emerging International Nuclear Order has become so complicated and muddled that it will not be unfair to call it a 'Dis-order'. Unlike the bipolar world of the Cold War, wherein, two rival alliances NATO and the Warsaw Pact led by the United States and the erstwhile Soviet Union respectively their nuclear stand-off was predictable with two main nuclear decision making centers, the current nuclear world has multiple nuclear actors and several decision making nodes. This adds a high degree of unpredictability and uncertainty in the current nuclear environment. In addition to the three major global players, new regional nuclear players have emerged some of whom not only have antagonistic relationships with their regional neighbors but also have conflictual relationships with one or the other global player. This toxic mix has been further aggravated by the disruption in the multilateral as well as bilateral arms control and disarmament processes that had helped manage the strategic conflicts in the past. The situation has been further vitiated with the emergence of advanced conventional weapons technologies as well as the revolution in computing and communications technologies augmented by Artificial Intelligence and widespread availability of smart communications devices and social media platforms with access to multitudes. The situation demands a serious analysis with a view to finding some practicable solutions to alleviate some of the negative and dangerous aspects of the existing and evolving nuclear order.

Emerging Global Nuclear Dis-Order?

(Naeem Salik)

Preamble:

The prevailing nuclear milieu is in a state of flux, the kind of which was not even witnessed at the height of the Cold War and certainly not since its end. The great power relations that had become more cooperative and cordial after the end of the East-West confrontation have once again turned antagonistic and sour. Presently we are on the verge of entering a new nuclear age that will have distinctly different attributes from the previous epochs of nuclear history. The new nuclear era will have multiple decision making nodes and multi-dimensional as well as multi-directional nuclear deterrence relationships; far more complicated than the Cold War environment wherein the antagonists were neatly arranged into two blocks making the security landscape far more stable and predictable.

The trend towards lowering the size of the nuclear arsenals as well as the salience of nuclear weapons in the security policies of the major powers has also seen a reversal. The past two decades or so has seen the emergence of regional nuclear powers in South Asia and North East Asia, thus giving rise to regional nuclear equations with their own unique nuclear dynamics. These regional nuclear balances also have direct or indirect linkages to the major powers' nuclear balance. Both Russia and the US have embarked upon ambitious modernization plans for their respective nuclear arsenals, while Britain which had announced

to reduce its nuclear weapons inventory from 200 to 180 has instead decided to build it up to 260 warheads[1] and nuclear weapons are also back in Belarus.[2] China on its part is reportedly expanding its current modest nuclear arsenal to a more substantive one,[3] owing to emerging threats to survivability of its nuclear retaliatory capability ostensibly by advancement in BMD systems and conventional long range precision strike weapons, though there has been no official pronouncement to this effect. However, US intelligence estimates of the extent of the Chinese expansion are clearly highly exaggerated, reminding one of the Cold War episodes of the 'Bomber Gap' and the 'Missile Gap' with the erstwhile Soviet Union.[4] In the Middle East the fate of the Iran Nuclear Deal (JCPOA) is hanging in the balance while in the Korean peninsula hopes of a denuclearized Korean peninsula are fading with every passing day with DPRK's renewed effort to expand its nuclear arsenal as well to extend the reach of its delivery systems. This turbulent environment has been further complicated by emerging technologies

[1] Claire Mills, Integrated Review 2021: "Increasing the Cap on UK's Nuclear Stockpile," *House of Commons Briefing Paper* Number 9175, 19 March 2021. Also see, Daryl Kimball, "The UK's Nuclear U-Turn," *Arms Control Today,* April 2021.
[2] Andrew Osborn, "Putin says Russia put nuclear bombs in Belarus as warning to West," Reuters, June 17, 2023.
[3] Tong Zhao, *What is Driving China's Nuclear Buildup?* August 5, 2021. https://carnegieendowment.org/2021/08/05/what-s-driving-china-s-nuclear-buildup-pub-85106

[4] Luke Benjamin Wells (2017) The 'bomber gap': British intelligence and an American delusion, Journal of Strategic Studies, 40:7, 963-989, DOI: 10.1080/01402390.2016.1267006 and "The Bomber Gap," https://www.globalsecurity.org/wmd/world/russia/bomber-gap.htm Also, Fred Kaplan, "*The Wizards of Armageddon*," 1983, Stanford University Press, 155-73.

which can directly impact on and disrupt the stability of the nuclear balance.

This paper is an endeavor to discuss and analyze some key developments around the world that are already underway and to highlight their ability to negatively impact the existing nuclear relationships with potentially serious ramifications and to explore some measures that can help mitigate their negative repercussions. The paper will provide a brief overview of the history of evolution of the global nuclear order which was inherently discriminatory, dividing the world at large into nuclear 'haves' and 'have nots.' However, the international community had learnt to live with it despite its being patently unfair and unjust. From this familiar nuclear environment we are now transitioning into an era of substantive changes. It is imperative to keep the nuclear history in mind to be able to understand and visualize the repercussions of the changes that we are witnessing around us, to be able to comprehend these in their true perspective. The paper will then discuss the existing relationship between the global powers, the complications arising out of the regional nuclear orders, the current precarious state of arms control and disarmament, erosion of the extended deterrence guarantees especially in the wake of the Ukraine War and their possible negative repercussions, emergence of new alliances and partnerships, and revolution in information, communication and remote sensing technologies.

Conception of the Nuclear Ages – A Historical Perspective:

Some analysts, mostly from the US and the West have bifurcated the nuclear era into three ages.[5] While the first two nuclear ages would be introduced briefly, the third nuclear age which is yet to fully materialize would be discussed in some detail to be able to understand its implications that in turn may enable us to take some timely measures to regulate some of the fledgling technological developments and to mitigate their negative effects before the situation becomes irredeemable. The First nuclear age represents the Cold War period characterized by the confrontation between two power blocks each led by a nuclear super power resulting in the creation of a 'Mutually Assured Destruction' relationship between the two. The dynamics of this era were relatively simpler to understand and manage with mainly two decision making centers. Britain and France, despite their claims of possession of independent nuclear deterrents of their own, were essentially part of NATO nuclear force structure while China chose to stay aloof from this game.

The Second nuclear age began with the end of the Cold War. This epoch was distinguishable from its predecessor by an initial period of bonhomie between the major powers, and significant reductions in

[5] Andrew Futter and Benjamin Zala, "Strategic non-nuclear weapons and the onset of a Third Nuclear Age," *European Journal of International Security* (2021), 6, 259.

the strategic arsenals of Russia and the United States under the START process.[6] It also saw the indefinite extension of the NPT in 1995 and the opening for signatures of the CTBT in 1996. However, this promising beginning did not last long and in May 1998, India which had made the Buddha smile at Pokhran in 1974, repeated the performance but with multiple tests this time around on 11th and 13th of May. Pakistan followed suit to restore the strategic balance, thereby, adding a new regional dynamic to the existing nuclear order.[7] This regional nuclear dyad did not fit neatly into the familiar model of the global powers strategic competition. The two new entrants into the nuclear club, shared contiguous borders, had a history of uneasy relationship marred by at least three major wars and several border skirmishes and serious crises. Not long after this development the 9/11 happened seriously disturbing the equilibrium of the international security order.

The first decade of the 21st century was to unfold several more serious developments such as the discovery of the covert efforts by Iraq, Libya, Syria and Iran to seek nuclear capabilities in violation of their international legal obligations as non-nuclear states parties to the NPT. The aftermath of the efforts to forcibly roll back these capabilities in case of the first three resulted in large scale death and destruction and destabilized these societies for a long time to come. In the meantime, DPRK stunned the world with its first nuclear test in 2006 and carried

[6] Fact Sheets, Treaties and Agreements, *Arms Control Today, Arms Control Association.*
[7] Michael Krepon, ""Looking Back: The 1998 Indian and Pakistani Tests," *Arms Control Today,* https://www.armscontrol.org/act/2008-06/looking-back-1998-indian-pakistani-nuclear-tests

out 5 more tests in the subsequent decade, giving birth to another regional nuclear order which has the US as its direct adversary alongside ROK that enjoys the extended deterrence umbrella provided by the US. The Iranian issue that appeared to have been brought under a semblance of control through the JCPOA in 2015 has been unable to find its footing after the multilateral agreement was unhinged by President Trump's decision to pull out of it.[8]

(1998)

(2006)

Currently we are on the threshold of entering into what is going to be termed as the Third nuclear age by those who subscribe to this mode of thinking, with attributes that would clearly be distinguishable from the two earlier periods of nuclear history. Some of the developments that are likely to determine the contours of the coming nuclear epoch are already unfolding before our eyes while others are

[8]Iran Nuclear Deal: Trump pulls US out in break with Europe allies, *BBC News*, 9 May 2018. https://www.bbc.com/news/world-us-canada-4404

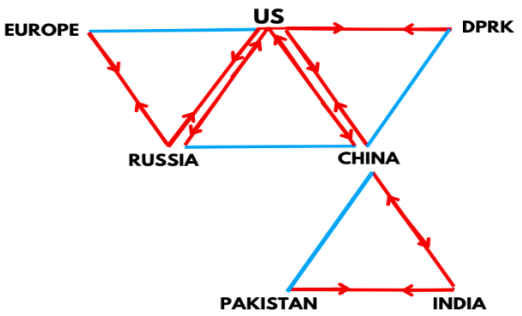
still evolving with uncertainty surrounding the actual outcomes of this whole process. Some of the key factors that are likely to influence the emergence of a new 'Global Nuclear Order' or as it may well turn out to be a 'Disorder' include; the relationship between major global powers, emerging regional nuclear equations, uncertain state of nuclear arms control and disarmament, erosion of the credibility of extended deterrence guarantees with associated risks of nuclear proliferation, emergence of new alliances and partnerships and significant advances in conventional military technologies and finally, the ongoing revolution in information, communications and remote sensing technologies. Not to forget the ubiquitous social media platforms with the potential to seriously disrupt the familiar nuclear norms, ethos and perceptions. To add to this mix is the growing role of lethal autonomous platforms singly and in swarms in the air, on land and in the maritime sphere. These platforms have played a substantial role in some of the more recent inter-state conflicts especially in the ongoing war between Russia and Ukraine. In this backdrop Steven Miller has raised a pertinent question when he asks that, "Are we going to be living in a nuclear world that is more laden with friction, more multilateral, less stable, less constrained by negotiated agreement, and possibly populated with additional nuclear armed actors"?[9] It may, therefore, be appropriate to analyze the above factors to be able to draw a clearer picture of the likely shape of the impending global nuclear landscape.

[9] Steven E. Miller, "The Rise and Decline of Global Nuclear Order?" *Belfer Center, Harvard Kennedy School*, April 2021.

Relationship between Global Powers:

The great power relations are increasingly frayed and are more triangular than the familiar bilateral setting of the Cold War era.[10] To add to the complexity of the tri-polar nuclear geometry each pole of this triangle is entangled with one or two other smaller triangles. These linkages encompass multiple actors, major and minor, each of whom is capable of initiating an action that could trigger a train of actions that could travel through the whole system vertically and horizontally. To elaborate this point further, China for instance, is part of the triangle involving major global powers United States and Russia. At the same time it is also part of a regional nuclear triad that includes India and Pakistan. Moreover, it is linked directly or indirectly to another regional nuclear equation in North East Asia involving United States and DPRK. The US too, is involved directly in the European nuclear milieu that includes Russia and America's European alliance partners, through its extended deterrence guarantees and deployment of ballistic missile defense systems on the European soil. The US is also one of the main poles in North East Asian nuclear confrontation with DPRK, while Russia has an indirect stake in the Korean nuclear stand-off.

[10] Steven E. Miller, "A Nuclear World Transformed: The Rise of Multilateral Disorder," *American Academy of Arts and Sciences*, 2020, 17. https://doi.org/10.1162/DAED_a_01787



The United States in its 2022 National Defense Strategy has identified China as the most consequential future challenge while acknowledging that Russia also poses acute threats.[11] Russia and China view the US as their most serious strategic threat and though they are more closely coordinating their strategic policies they are not inclined to get into a formal alliance relationship. The US is actively pursuing the China containment policy in the Asia-Pacific region and is supplementing its existing bilateral security relationships with Japan, South Korea, Philippines and Australia building new alliances and groupings such as QUAD[12] that includes Japan, India, Australia and the US and AUKUS[13] involving US, UK and Australia. AUKUS is significant due to its trend setting transfer of nuclear powered submarines by two nuclear weapons states US and the UK to a non-

[11] Miller, A Nuclear World Transformed, 31.
[12] Australian Government: Department of Foreign Affairs and Trade, "Quad Meetings and Processes," https://www.pmc.gov.au/quad-2023, https;//www.pm.gov.au/media/quad-leaders-joint-statement and http://www.pm.gov.au/media/quad-leaders-vision-statement-enduring-partners-indo-pacific
[13] Trevor Findlay, "The Australia-UK-U.S. Submarine Deal: Not Necessarily a Sure or a Good Thing," *Arms Control Today*, November 2021.

nuclear weapons state Australia. Such developments are bound to evoke reactions that in all likelihood will lead to a renewed arms race in the Asia-Pacific region which is fast becoming a new theater of contestation especially in the South China Sea and around Taiwan.

The 2022 Nuclear Posture Review (NPR) enunciates that, "the United States is entering an unprecedented phase of facing two major nuclear powers as strategic competitors and potential adversaries, creating new stresses on stability and new challenges for deterrence, assurance, arms control, and risk reduction."[14] It identifies Russia as "the most capable and diverse nuclear rival," and describes China's growing capability as "a threat to the United States and allies."[15] This sets the stage for a twin tracked nuclear competition. The 2018 NPR talked of a 'Tailored and Flexible' deterrence opening the possibility of use of nuclear weapons to deter limited use of sub-strategic nuclear weapons by Russia and China in regional conflicts. This led to the authorization to develop a 'Low Yield Supplemental Warhead for SLBMs.'[16] The new warhead designated as W-76-2 was designed to be mounted on Trident-2 D 5 SLBM with a yield of 5 kilotons was quickly developed and deployed in 2019. This warhead initially developed as a stop gap arrangement pending the development of a new Submarine Launched Cruise Missile (SLCM) is now there to stay since the NPR 22

[14] US Department of Defense, "2022 National Defense Strategy of The United States of America," https://media.defense.gov/2022/Oct/27/2003103845/-1/-1//1/2022 NATIONAL-DEFENSE-STRATEGY-NPR-MDR.PDF
[15] 2022 National Defense Strategy of the United States.
[16] Nuclear Posture Review 2018, Office of the Secretary of Defense, United States of America.

reveals that the new SLCM project has been shelved.[17] The low yield SLBM would have serious strategic implications. Firstly, given the fact that it would be mounted on a strategic delivery system it would cause discrimination problems and could well evoke undesirable reactions by the adversaries. Second, due to its high accuracy and limited collateral damage there would be a greater likelihood and willingness to use it in a conflict, especially involving regional adversaries such as DPRK and Iran. With the over 7000 miles range of the Trident missiles it would provide a variety of launch options. Third, it would provide a quick response option since SSBNs are always on patrol with a high state of operational readiness. Fourth, its employment would not be constrained by the need for seeking political consent of the allies as in case on so called tactical nuclear weapons deployed in Europe or by the sensitivities of the Japanese or the South Koreans in case of North East Asia.

Of late, Taiwan has become a flash point between the US and China with high level political visits by bipartisan US delegations to Taipei in defiance of Chinese protestations. The Chinese, in turn, responded by carrying out a show of force including their air and naval forces around the Taiwan straits. They have carried out live firing drills in the area firing long range missiles.[18] Chinese have also developed and tested anti-ship hypersonic ballistic missiles nicknamed 'carrier killers' demonstrating the capability to keep US carrier groups at bay in the

[17] 2022 National Defense Strategy.
[18] David Rising, "China's Response to Pelosi Visit a Sign of Future Intentions," *AP News*, August 19, 2022.

South Pacific region. In response, the US is augmenting its presence in the region by increasing the number of its bases in Philippines under a new agreement signed between the two countries.[19]

US-Russia relations which had been under stress since Russia's invasion and annexation of the Crimean peninsula in March 2014, have been further strained in the aftermath of the Russian invasion of Ukraine in February 2022 with the US and its European allies actively supplying advanced weapons and equipment to Ukraine to sustain its war effort. The US alone has supplied weapons and equipment worth tens of billions of dollars including some systems with highly symbolic value such as the M1A1 Abrams tanks, HIMARS artillery rocket systems and a battery of Patriot Missile Defense system. President Biden has recently given nod to his European allies to transfer F-16 aircraft that Ukraine had been pleading for, while offering to train Ukrainian pilots to fly these aircraft. [20] Consequent to US clearance Norway, Denmark and Holland have started supplying the aircraft to Ukraine.[21] The implied Russian threats to use nuclear weapons has apparently kept the European supporters of Ukraine from physically intervening in the conflict and has also imposed caution on them in deciding what kind of weapon systems to be transferred to Ukraine. Russia's security has been further undermined by Finland's entry into the NATO which has created

[19] US Department of Defense, "Philippines, U.S. Announce Locations of Four New EDCA Sites," April 3, 2023.
[20] Jonathan Beale and James Gregory, "F-16 Fighter Jets: Biden to let allies supply warplanes in major boost for Kyiv," *BBC News*, 20 May 2023.
[21] https://www.reuters.com/world/europe/norway-becomes-third-country-donate-f-16-jets-ukraine-broadcaster-tv2-2023-08-24/

a potential arena for future deployment of NATO assets. This is exactly the kind of development Russians were trying to prevent in Ukraine. On the other hand, the Russians have placed some of their battlefield nuclear weapons on the territory of its ally Belarus. Such developments will have long term impact on the future of European security as well as US-Russia relations. With tensions running high on Belarus – Poland border any outbreak of conflict there could inadvertently cause damage to some of the Russian tactical nuclear weapons placed on the Belorussian soil leading to an undesirable escalation with nuclear undertones.

Complications Arising Due to Establishment of Regional Nuclear Orders:

In May 1998 India conducted multiple nuclear tests inducing Pakistan to follow suit and thereby creating a new regional nuclear sub-system in South Asia, with its own peculiar dynamics, given the contiguity of the two countries and a history of conflictual relations between the two neighbors. This equation was further complicated by China's proximity with the region and uneasy Indo-China relations resulting in the creation of two nuclear dyads within this regional triangle – The Sino-Indian Dyad and the Indo-Pakistani Dyad. This regional nuclear ecosystem cannot remain immune to developments in the larger nuclear order since China is also part of the global powers' triangle. Similarly, any destabilization of the regional nuclear order can cause turbulence in the global nuclear order. In the past 25 years India and Pakistan have been involved in several serious crises the last one

being the stray Indian cruise missile landing on Pakistani territory. The past experience suggests that crises in South Asia usually flare up closer to national or critical state elections in India which will again be going through the process of national elections in 2024 and recurrence of an Indo-Pakistan crisis in the run up to those elections cannot be ruled out.

The Korean peninsula is another regional nuclear arena where DPRK is involved in a nuclear stand-off with the US while China due to its geographical proximity cannot remain unaffected by any confrontation between the US and DPRK. The Russians too have some stakes in this region. DPRK since its first nuclear test in 2006 has carried out five more nuclear tests and is feverishly pursuing an ICBM program besides developing a variety of missile systems including SLBMs and has attempted – so far unsuccessfully – to launch military satellites. These developments have unnerved the Republic of Korea (ROK), which has US extended deterrence guarantee, yet DPRK's nuclear build–up and Russian war on Ukraine triggered a domestic political debate on whether it should be seeking its own nuclear capability. For the moment, the US has tried to alleviate ROK's concerns by reiterating its nuclear guarantees in the recently signed Washington Declaration[22] and by assuring the frequent visits to ROK naval bases by US nuclear submarines. US has also promised to give a greater say to ROK in nuclear decision making and has agreed to conduct table top exercises to streamline procedures. US has also tried to alleviate bilateral

[22] Scott A. Snyder, "The Washington Declaration: Expanding the Nuclear Dimension of the U.S.-South Korean Alliance Response," *Council on Foreign Relations*, April 27, 2023.

misgivings between Japan and South Korea and narrow down their historical differences through the recently held trilateral summit at Camp David.[23]

The third regional arena of nuclear contestation is Europe where as a consequence of the Ukraine war fears of an inadvertent or deliberate escalation to the nuclear conflict have been compounded. Despite the presence of US air delivered tactical nuclear weapons and the nuclear guarantees there have been anxieties within the allies, which might lead some of them with the technological capacity to do so, to think of the need for building up their own nuclear capabilities. The longer the Ukraine conflict continues the more chances there will be of some catastrophic incident happening that could escalate the conflict into a nuclear confrontation between two of the biggest nuclear possessors with unimaginable global repercussions. However, despite the media campaign to drum up the Russian nuclear saber rattling and the American reiteration of its nuclear guarantees to its European allies. It would be far-fetched to think that a situation will arise where Russia will actually use battlefield nuclear weapons in Ukraine and an equally remote possibility of a direct US-Russia nuclear confrontation as a consequence.

The regional nuclear orders that started emerging in the late 1990s are firmly in place now. It is evident from the above discussion that these have added another layer of complexity to the global nuclear

[23] https://www.whitehouse.gov/briefing-room/statements-releases/2023/08/18/fact-sheet-the-trilateral-leaders-summit-at-camp-david/

order involving many diverse actors and multiple decision making centers each of whom is capable of shaking the foundations of the already tenuous global nuclear balance. According to Scott Sagan and Vipin Narang, "The case of the 2019 Balakot crisis between India and Pakistan highlights the risk," and draw attention to the fact that, "new nuclear states may increasingly attempt to push the line with how far they can go against their nuclear adversaries" pointing out that, "this crisis was the first use of Indian military airpower against mainland Pakistan in almost half a century and the first time a nuclear weapons state has bombed the undisputed territory of another nuclear weapons state."[24] They also cite India's stand-off with China, another nuclear power along the Line of Actual Control (LAC) in Ladakh in 2020. However, their contention that, "Intense conflict between three nuclear powers simultaneously is no longer a remote possibility,"[25] is tilted too much towards pessimism. There is no empirical evidence to support this claim and the reality on ground suggests that after heating up of the LAC instead of heightening of tensions and increased frequency of armed clashes across the Line of Control between Indian and Pakistani controlled parts of Kashmir there has been a dampening of hostility owing to restoration of the 2003 ceasefire arrangement through back channel talks between the two countries. Even Indian experts have acknowledged that since the outbreak of the crisis in Ladakh the 'N'

[24] Vipin Narang and Scott Sagan eds., "*The Dangerous Nuclear Future"* in *The Fragile Balance of Terror – Deterrence in the New Nuclear Age,* 231-2.
[25] Narang and Sagan, 232.

word has not been used.[26] Along the LAC itself the Chinese and Indian soldiers have so far used sticks and stones in their mutual hostilities and have refrained from firing even conventional bullets. Therefore, escalation of this conflict to a nuclear level is too far-fetched at least for now.

Sagan and Narang also discuss the possibility of three nuclear powers – the United States, China and DPRK coming into contact with each other.[27] Although there is a purely theoretical possibility of such an entanglement but it is highly unlikely that China will risk a direct nuclear confrontation with the US for sake of DPRK and jeopardize its own vital national interests. They have rightly pointed out that due to the complexities of the prevailing international security architecture, the risks of an advertent or inadvertent nuclear use are greater than the more predictable Cold War era. They also point out that the leaders of suspected nuclear aspirants are "personalist strongmen." They have included leaders like Turkish President Erdogan, Muhammad bin Salman of Saudi Arabia, India's Modi and Donald Trump of the United States in the same category suggesting that, "leaders in even mature states can make decisions on a whim and engage in risky nuclear behavior," and are capable of challenging the traditional notions of "rational deterrence."[28]

[26] Manpreet Sethi, "Why India and China Haven't Used the 'N' Word Throughout the Ladakh Crisis," The Wire, August 3, 2020, https://theprint.in/opinion/india-china-nuclear-doctrine-ladakh-conflict/473444/
[27] Narang and Sagan, 232.
[28] Narang and Sagan, 233.

Uncertain State of Nuclear Arms Control and Disarmament:

The current arms control and disarmament scene does not inspire much confidence. In the past few years, instead of any forward movement there have been retrogressive steps such as revocation of the INF Treaty.[29] Even confidence building agreements such as the 'Open Skies' treaty are also on the verge of demise.[30] Though the last remaining bilateral agreement between US and Russia – the New START was saved at the nick of time by Biden Administration in early 2021, its future seems to be in peril and at the moment any prospects of its extension or replacement by a follow on treaty are very bleak. Russia has recently stopped sharing data with the United States required by the treaty[31] and the gulf between the two largest nuclear powers is widening. Consequently, this has had a deleterious effect on the multilateral arms control negotiations in the designated UN forums. Even after the end of the Ukraine conflict, the bad blood and trust deficit it has created will not easily disappear and it will take a while before the arms control process comes back on track. The last NPT REVCON ended in acrimony[32] and the prospects of the next do not seem very

[29] C. Tod Lopez, "U.S. Withdraws from Intermediate-Range Nuclear Forces Treaty," US Department of Defense, August 2, 2019.
[30] Ryan Browne, "US FORMALLY WITHDRAWS FROM Open Skies Treaty that bolstered European Security," *CNN*, November 22, 2020. https://edition.cnn.com/2020/11/22/politics/us-withdrawal-open-skies/index.html
[31] START Treaty: "Russia stops sending nuclear arms info to US," *AlJazeera*, 30 March 2023. https://www.aljazeera.com/news/2023/3/30/start-treaty-russia-stops-sending-nuclear-arms-info-to-us
[32] Non-Proliferation Treaty Review Conference Ends Without Adopting Substantive Outcome Document Due to Opposition by One Member State," https://press.un.org/en/2022/dc3850.doc.htm

bright as well in view of the breakdown of P-5 consensus. Given the new competition towards modernization and expansion of nuclear arsenals there seems to be no appetite on part of the major powers to contemplate any further reductions in their arsenals which is likely to further accentuate the existing frustration amongst non-nuclear weapon states parties to the NPT on lack of progress on Article-6 obligations. Progress on multilateral arms control negotiations at forums such as the Conference on Disarmament (CD) Geneva has been frozen for a while due to conflicting interests of major powers. Meanwhile, reports suggest that Iran is inching closer to a nuclear weapons option and DPRK is feverishly advancing its long range missile delivery systems including SLBMs in the midst of frequent reports about its imminent preparations for yet another nuclear test. Only time will tell whether such an action proves to be the proverbial straw to break the back of the Japanese and South Korean camels leading to their respective decisions to go their own nuclear way.

Erosion of the Extended Deterrence Guarantees and Associated Risks of Proliferation:

One of the weaknesses of the concept of extended deterrence has always been doubts about its credibility especially when the security of the guarantor itself is under threat. The ongoing war between Russia and Ukraine has raised questions about the wisdom of nuclear abstention especially given that Ukraine had given up a large (third largest in the world) arsenal of Soviet legacy nuclear weapons and joined the NPT as a non-nuclear weapon state in December 1994. Ukraine's decision was

predicated on the assurances about its sovereignty and territorial integrity given in the Budapest Memorandum of 1994, with US, UK, Russia and Ukraine as the signatories.[33] Similarly, in North East Asia due to the extremely strident nuclear posture adopted by DPRK anxiety was felt by ROK which expressed its desire to develop its own nuclear capability as is evident from some of the newspaper reports such as, the Washington Post headline, "South Koreans Wonder: will the US still protect us from North Korea"?[34] The Wall Street Journal reported, "South Korean President Says Country Could Develop nuclear weapons"[35] and the New York Times pronouncing that, "In a First, South Korea declares nuclear weapons as a Policy Option."[36] While the Japan Times headline suggested, "South Korea's Flirtation with nuclear arms piles pressure on U.S."[37] Although the South Korean leader quickly backed off from his rhetoric.[38]

There has been unease in Japan as well. Former Japanese Prime Minister Shinzo Abe suggested that Japan should discuss with the US a nuclear sharing arrangement similar to the one it has with its NATO

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[33] Ukraine: The Budapest Memorandum of 1994, *Policy Memo Resource, Harvard Kennedy School*, https://policymemos.hks.harvard.edu/files/policymemos/files/2-23-22_ukrain…

[34] https://www.washingtonpost.com/world/2023/02/07/south-north-korea-nuclear-weapons-security/

[35] https://www.wsj.com/articles/south-korean-president-says-country-could-develop-nuclear-weapons-11673544196

[36]https://www.nytimes.com/2023/01/12/world/asia/south-korea-nuclear-weapons.html

[37]South Korea's Flirtation with nuclear arms piles pressure on U.S.

[38]South Korea leader Dials back comments on nuclear weapons — https://www.wsj.com/articles/south-korea-leader-dials-back-comments-on-developing-nuclear-weapons-11674154870?mod=world_lead_pos2

allies.[39] For now, at least it appears that, the leaders in both South Korea and Japan were trying to attract the US attention to their increasing security concerns rather than expressing any serious commitment to develop their own respective nuclear capabilities. But these episodes are indicative of the desire to attain nuclear autonomy at a more propitious time or in case of a sudden catastrophic event impinging on their security. There is no doubt in the fact that both countries have advanced technological capabilities in the nuclear domain but any decision to go for a nuclear weapons option will entail serious downsides and heavy costs.[40] The US, therefore, had to reassure its allies especially the South Koreans through the recently signed 'Washington Declaration' promising to involve ROK in nuclear planning and decision making, conducting table top exercises and its nuclear submarines regularly calling at Korean ports.

Emergence of New Alliances and Partnerships:

New alliances and partnerships are emerging especially in the Asia-Pacific region in the form of Quadrilateral Security Dialog, commonly known as Quad partnership involving the US, Japan, India and Australia. After remaining dormant for some years the process has been reinvigorated in recent years with regular summit meetings

[39] Yoshiaki Nohara, Japan Should Discuss NATO-Like Nuclear Weapons Sharing, Abe Says, Bloomberg, 27 February 2022. https://www.bloomberg.com/news/articles/2022-02-27/japan-should-discuss-nato-like-nuclear-weapons-sharing-abe-says?leadSource=uverify%20wall

[40] Siegfried S. Hecker, The Disastrous Downsides of South Korea Building Nuclear Weapons, 38 NORTH, January 20, 2023.

between the leaders of the partner countries. The latest of which was held on the sidelines of the G-7 meeting at Hiroshima.[41] This grouping professes that it is not a security partnership yet there is growing cooperation in the emerging technologies including AI and cyber security. Within the Quad itself there are also bilateral agreements amongst its members. They also participate in joint military exercises to improve interoperability. Malabar series of naval exercises between US and India now also include Japan and Australia. One of the most significant aspect in their cooperation is in the domain of maritime surveillance especially submarine detection.

Britain which had rolled back its presence from East of Suez in the 1960s and making a comeback with regular naval presence in the South Pacific. It had deployed its aircraft carrier HMS Queen Elizabeth in the region in 2021 and is planning to deploy it in the Pacific in 2025.[42] It is also a member of the newly formed grouping AUKUS alongside the US and Australia. AUKUS has set a new precedent in transfer of military technology wherein nuclear naval propulsion technology is being transferred by the US and UK to Australia in the form of eight nuclear powered submarines to be built in the US and UK. This has naturally upset China and is viewed by the Chinese as part of the broader plan to contain and challenge their presence in the Asia-Pacific region

[41]Quad Leaders' Summit Fact Sheet, https://www.whitehouse.gov/briefing-room/statements-releases/2023/05/20/quad-leaders-summit-fact-sheet/

[42] Britain to send an aircraft carrier to the Indo-Pacific in 2025, www.defensenews.com/global/europe/2023/05/18/britain-to-send-an-aircra file:///C:/Users/Dell/Desktop/The%202021%20Strategic%20Defence%20and%20Security%20Review%20in%20prospect.html

and will compel them to initiate counter measures. There is also skepticism as to the impact of this exclusive English speaking club on existing groupings like Quad. India may also be wary of Australian navy's reach extending to the Indian Ocean which it considers as its own backyard. Canada has also expressed its desire to join the AUKUS[43] which if materializes will add new dynamics to this partnership. All these countries are already part of the 'Five Eyes Alliance' – an intelligence sharing arrangement between English speaking countries that also includes New Zealand.[44]

It is not beyond the realm of possibility that ROK may also join the Quad. Strengthening of Australian naval potency and presence in the Pacific and Indian Ocean regions will cause ASEAN countries in its immediate vicinity especially Indonesia and probably Malaysia to start worrying about the upsetting of the regional power balance and may evoke some reactions. This will further vitiate the security environment in Asia-Pacific. Second, the US has broadened the meaning of Integrated Deterrence in its 2022 Nuclear Posture Review (NPR) to include the power potential of its allies and partners besides the US conventional and nuclear power which will mean that all these alliances and partnerships whether nuclear or non-nuclear will have nuclear undertones by playing the role of contributors to larger American nuclear deterrence architecture. There has also been talk of creation of

[43]Canada hopes to join AUKUS defense pact, says report, https://www.theguardian.com/world/2023/may/08/canada-aukus-defence-pact
[44] "The Five Eyes - The Intelligence Alliance of the Anglosphere," https://ukdefencejournal.org.uk/the-five-eyes-the..

an ‘Asian NATO’ though the geography doesn’t correspond to the acronym of NATO but it could well be a franchise of NATO in Asia-Pacific. However, US Secretary Defense Lloyd Austin had ruled out any such plans in his address at the Shangri La Security Dialog held at Singapore in June 2022.[45]

Significant Advances in Conventional Military Technologies:

In recent years conventional military technology has made substantial advances and many of the emerging weapons systems due to their speed, precision and lethality have the potential to ‘entangle’ with nuclear weapons. For this reason many of these emerging technologies have been branded as ‘disruptive’ technologies. Some experts have named these as ‘Strategic Non-nuclear Weapons’ (SNNWs).[46] These weapons can with their reach and precision strike capabilities be used for launching pre-emptive first strikes against adversary’s nuclear assets, and disrupt/destroy their command and control systems. There will be much greater temptation and readiness to use these SNNWs for such missions since there will be no fear of collateral damage and decisions to launch conventional weapons are much easier to make as compared to a nuclear strike. However, from the point of view of the recipient of such a strike it will be anything but a pre-emptive counter force strike and it will respond accordingly. In a way the SNNWs will

[45] US Defense Secretary Lloyd Austin Says The U.S. Is Not Seeking To Create An 'Asian NATO,' https://warnewsupdates.blogspot.com/2022/06/us-defense-secretary-lloyd-austin-says.html
[46] Futter and Zala, 257.

erode the credibility of nuclear deterrence and cause serious strategic instability. These weapons will include conventionally armed hypersonic cruise missiles and hypersonic glide vehicles as well as the anti-ship missiles dubbed the 'carrier killers.' According to some experts four possible scenarios could define the third nuclear age as under:[47]

- First, and arguably the most likely, is one where the deployment of SSNW drives nuclear proliferation and arms racing by all nuclear armed states, increases the risk of misperception and escalation, and creates new challenges for crisis stability and the non-proliferation regime.
- Second, is where one state (most likely, but not necessarily the United States) gains a temporary strategic advantage through the deployment of SNNW.
- Third, and perhaps the most desirable, is one characterized by restraint in SNNW normative mechanisms and regimes.
- Fourth, is where SNNW proliferation undermines nuclear-weapons. In this scenario the vulnerabilities of nuclear forces to SNNW make reliance on SNNW a more credible option for all states.

Barry Posen in his study on 'Inadvertent Escalation' in the context of the first nuclear age had argued that, the greater the counterforce capabilities and commitment to counter force strategies, "the greater the chances of inadvertent nuclear escalation in the event of

[47] Andrew Futter and Benjamin Zala, 'Strategic non-nuclear weapons and the onset of a Third Nuclear Age,' European Journal of International Security (2021), 6, 259

a conflict."[48] However, in the third nuclear age the temptation to employ counter force strategies is likely to be much greater in view of the fact that the SNNWs will enable the implementation of such strategies without having to cross the nuclear threshold.[49] The possibility of such strikes will not only negatively impact the strategic stability but will also pose a challenge to the existing taboo against nuclear use.

Recent advancements in conventional military technologies have resulted in enhancing the speed and accuracy of conventional weapon systems. These advanced military technologies have created new possibilities of inadvertent escalation due to 'entanglement' of conventional weapons with nuclear weapons and their associated systems. As James Acton has explained:

> "Entanglement has various dimensions: dual use delivery systems that can be armed with nuclear and non-nuclear warheads; the comingling of nuclear and non-nuclear forces and their support structures; and non-nuclear threats to nuclear weapons and their associated command, control, communications and information (C3I) systems. Technological developments are currently increasing the entanglement of non-nuclear weapons with nuclear weapons and their enabling capabilities."[50]

[48] Barry Posen, Inadvertent Escalation: Conventional War and Nuclear Risk (Ithaca, NY: Cornell University Press, 1991), 9.
[49] Futter and Zala, 267.
[50] James M. Acton, ed., 'ENTANGLEMENT – Russian and Chinese Perspectives on Non-nuclear Weapons and Nuclear Risks,' 2017, Carnegie Endowment for International Peace, 1.

The threat of entanglement can materialize in two ways; first, by using highly accurate and precise non-nuclear weapons for a disarming first strike against nuclear forces and second, mistakenly causing damage to nuclear weapons and delivery systems including strategic bombers and SSBNs which are located at same military bases alongside conventional systems. Such threats are being viewed with great concern by the Russians and Chinese[51] and may explain the recent qualitative developments of Russian arsenal including advanced delivery systems and the reported quantitative increase in Chinese strategic arsenal. In South Asia due to geographical contiguity of the two antagonists as well as restricted geography of Pakistan the problem of entanglement will assume even more serious proportions especially in case of a major conventional war or even in a limited conflict where deep air strikes are employed against critical targets.

Revolution in Information, Communication and Remote Sensing Technologies:

We are already in the midst of a revolution in Information, Communications and Remote Sensing Technologies boosted by Quantum Computing and Artificial Intelligence (AI). One of the major challenges of the information age has been the availability of excessive amounts of raw information which was beyond human capability to process and convert into usable data. However, these huge volumes of information being received through remote sensors can now be instantly

[51] Acton, 2.

processed and analyzed thanks to Quantum Computing Capabilities and AI can generate possible response options compressing the decision making and reaction times with the ever present possibilities of ill-considered or hasty decisions with catastrophic consequences. The net effect of first strike capabilities now becoming available in the form of SNNWs and the ability to react quickly would be to create first strike instabilities in any future crisis. Possession of advanced communications and surveillance capabilities along with the SNNWs would also embolden non-nuclear weapon states involved in a crisis or a conflict with an advanced nuclear weapon state to take precipitate actions. This will have negative impact on crisis stability and in turn on overall strategic stability. Parallel to all these the growing cyber warfare capabilities pose a serious risk to nuclear command and control systems and unless regulated can through multilateral agreements have the potential to cause a crisis or trigger a chain of escalation during a crisis. This threat gets even more complicated due to difficulties in attribution and the possibility of non-state actors launching serious cyber-attacks besides the state actors.

The Growing Impact of Lethal Autonomous Weapons:

These weapons are not being used as nuclear weapons carriers as yet but they are capable of causing disruptions in the execution of nuclear operations by infringing with the command and control systems as well as affecting the second strike capabilities by identifying the real time locations of mobile nuclear weapons platforms and can even attack these in case of armed drones. These weapons have already made an

impact on two recent conflicts i.e. in the Azerbaijan-Armenia[52] and Russo-Ukraine wars.[53] The introduction of Unmanned Underwater Vehicles (UUVs) will pose a threat to the submarine based second strike capability by discovering the locations of submerged submarines and even by attacking these. Given the fact that these unmanned platforms armed as well as unarmed are operating in all the three domains that is air, land and sea and with the developments like swarm attack techniques they carry serious escalation potential. The Russians have even announced their intention to arm some of their UUVs with nuclear warheads which if implemented could add a serious dimension to threats to deterrence stability.[54]

Recommendations and Conclusion:

To alleviate some of the problems discussed in the preceding paras following recommendations can be made:

- Dialogue on strategic stability between the great powers should be revived.
- Appropriate crisis management, dispute resolution and stabilization arrangements should be agreed to and implemented amongst regional nuclear adversaries.

[52] In Nagorno-Karabakh, drones gave Azerbaijan huge advantage … https://www.washingtonpost.com/world/europe/...
[53]Russia and Ukraine are fighting the first full-scale … https://www.washingtonpost.com/world/2022/12/…
[54] Russia Plans To 'Circumvent' US Ballistic Missile ... - space4peace https://space4peace.org/russia-plans-to-circumvent...

- Arms control and disarmament agreements help in better management of risks and differences between contending parties and should therefore, continue to be pursued in earnest.
- The disruptive potential of SNNWs needs to be recognized and regulatory mechanisms devised to reduce their negative influence on deterrence stability.
- Provocative military activities especially in contested areas need to be avoided to prevent the onset of avoidable crises.
- Alliances, partnerships and groupings created with the specific purpose of containment of other countries should be avoided.
- Exceptional treatment to some strategic partners should be viewed in the context of its adverse impact on regional peace and stability.
- Emerging technologies with disruptive potential need to be brought under some international regulatory order.

It is evident from the above discussion that the 'Global Nuclear Order' is afflicted by multiple challenges including the competing geo-strategic, politico-diplomatic and technological interests varying in scope from global to regional contestations. The familiar bipolar nuclear balance which the world had experienced during almost 50 years of the Cold War has been replaced by multipolar order, which is, in fact, closer to disorder with multiple players and several independent decision making nodes. To the traditional global nuclear order multiple regional nuclear orders have been added, each linked directly or indirectly with the global order. Consequently, any serious development either in the

global equation or the regional nuclear relationships can causes ripples throughout the international nuclear architecture. The multilateral and bilateral arms control and disarmament treaties and agreements which had brought a degree of sanity to the system and had made the management of crises easier is itself in shambles with several cold war legacy arrangements either abandoned or are under the threat of dismantlement. To add to the tenuous state of affairs no new initiative appears to be in sight in the foreseeable future. The Ukraine war has badly dented the faith in security guarantees for weaker states and eroded the confidence in extended deterrence assurances with the potential to lead to nuclear breakout especially amongst the technologically advanced states that had given up their nuclear weapons option in return for such assurances. Should such an eventuality materialize it would greatly add to the prevailing uncertainties in the international security landscape and push the current nuclear order clearly towards a disturbing disorder. The advent of the SNNWs has further complicated the situation. The power of various social media platforms to mobilize public opinion and thereby generate additional pressures on the decision makers during crisis situations can only be underestimated at our own peril.

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