

VISION

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Compiled & Edited by: Haris Bilal Malik

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Strategic Vision Institute (SVI)

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SVI Foresight

SVI Foresight is a monthly electronic journal. It has a multi-disciplinary perspective highlighting contemporary strategic and security studies. The Journal is envisioned to be a collection of policy-oriented articles written by its Research Associates, Visiting Faculty, and professional experts. The objective is to provide the readership with a concise all-round and real-time policy-oriented discourse on contemporary strategic regional and international developments, highlighting their relevance to Pakistan.

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Editor's Note

In South Asia, India has been enhancing its Intelligence, Surveillance, and Reconnaissance (ISR) based surveillance and strategic situational awareness capabilities. Author views that this has increased the existing gap vis-à-vis Pakistan's ISR capabilities. This would likely disturb the strategic balance of the region which would ultimately increase the risks of strategic instability in the region. Since digital weaponry has become the future of warfare, Pakistan needs to take measures to enhance its situational awareness capabilities and overcome this evolved Indian threat to its security

Moreover, it is opined that over the last few years, India has embarked on an extensive augmentation of its strategic nuclear capabilities as a part of its grand strategy that is intended towards achieving the status of global power. In pursuit of this, it has carried out an overwhelming enhancement of its nuclear capabilities aimed at completing a strategic nuclear triad. The author maintains that India's nuclear triad is in large part ensured by its offensive enhancement of air, land, and undersea nuclear capabilities. Indian eagerness to expand its nuclear triad would likely challenge the nuclear threshold of Pakistan. This would likely further affect the strategic stability of the South Asian region.

One article discusses the Treaty on Prohibition on Nuclear Weapons (TPNW) commonly known as the 'Ban Treaty' which has been recently ratified by fifty states. Author analyses that the conclusion of the ban treaty was not an instant act; rather the lack of progress by the nuclear-weapons states towards nuclear disarmament has played a significant part. This reflects the dissatisfaction and disappointment of the non-nuclear-weapon states vis-à-vis the existing international non-proliferation arrangements.

In this volume of the *SVI Foresight*, a very informative article is about highlighting Pakistan's achievements in Peaceful Uses of Nuclear Energy. It has been opined that Pakistan has achieved remarkable success in utilizing nuclear technology for peaceful purposes in compliance with the international practices of nuclear safety and security and regulatory control. These efforts are needed to be acknowledged. However, unfortunately, Pakistan has been facing discrimination from the international community in this regard.

Another very important subject that has been touched by one of the contributors is the notions of Pakistan's nuclear deterrence in the contemporary regional environment. The author maintains that in recent years, India has been incessantly trying to undermine the strategic parity in the region by challenging Pakistan's nuclear threshold which covers various spectrums of threats. In this regard, India's extensive and provocative military modernization both at the

conventional and unconventional levels, self-proclaimed notions of 'surgical strikes' and 'new normal' under the nuclear scenario, and the gradual shifts in its doctrinal posture are worth considering. These have contributed towards challenging Pakistan's credible minimum nuclear deterrence in the contemporary regional context.

It is hoped that readers will find a good blend of articles focusing on various aspects of the contemporary security discourse in South Asia.

The *SVI Foresight* team invites and highly encourages the contributions from the security and strategic community in the form of opinion based short commentaries on contemporary political, security, and strategic issues. Any suggestions for further improvements are welcome at our <u>contact address</u>. Please see <u>here</u> the copy of the *SVI Foresight* electronic journal. You can find us on <u>Facebook</u> and <u>Twitter</u> and can also access the SVI <u>website</u>.

Research Associate

Haris Bilal Malik

Surveillance and Situational Awareness Technologies in South Asia and Its Implications

Sher Bano

In the current nuclear age, improvements in surveillance and situational awareness technologies have revolutionized the emerging scenarios of conflicts. The advances in remote sensing systems and the adoption of unmanned automated systems have made the early warning systems more relevant. In a way, it has increased the visibility of the adversary's actions. This has resulted in the extension of the decision making time during a crisis. Even though the emerging situational awareness technologies provide a better understanding of a conflict to the decision-makers, the use of such capabilities can also complicate crisis management by introducing new escalatory risks. In South Asia, India has been enhancing its Intelligence, Surveillance, and Reconnaissance (ISR) based surveillance and strategic situational awareness capabilities. This has become considerably significant if analyzed in the context of India's evolved strategic posture. Resultantly, along with the increase in the existing gap vis-à-vis Pakistan's ISR capabilities, the strategic balance of the region is more likely to get disturbed. This would ultimately increase the risks of strategic instability in the region.

In recent years, India has acquired advanced ISR capabilities in multiple domains; air, sea, land, space, and cyber. India also enjoys a conventional superiority vis-à-vis Pakistan with the provision of more sophisticated and advanced space-based ISR assets. These include; spy satellite RISAAT-II launched in 2009, and communication satellites GSAT-7 launched in 2013 and GSAT-6 launched in 2015. These satellite systems are aimed at providing ISR based information about Pakistan's military deployment and dispositions. Similarly, India's battlefield surveillance radars (BFSRs) can detect targets such as heavy combat vehicles, creeping men, and low flying helicopters. In addition to these, India has indigenously developed weapon locating radars (WLR) to detect the range and location of Pakistan's artillery at the border. Another significant capability in this regard is the acquisition of an Airborne Early Warning and Control Systems (AEW&CS). These are equipped with 240-degree coverage radar aimed at detecting missiles, UAVs, and aircrafts at a safe distance of 200km. Furthermore, India has developed highly sophisticated UAVs such as the Heron-TP drone in collaboration with Israel. This drone can be used for both tactical and strategic missions. These developments indicate that India has been continuously enhancing its ISR capabilities.

It is notably important to discuss that the situational awareness capabilities can be classified into; predictive, preemptive, and actions enabling categories. The early information based on the perceived military advantage can incentivize a military action. The predictive technologies can provide information about the adversary's deployment of the weapon system,

movement of forces, and the intent to take military action through early-warning satellites. The preemptive nature of the situational awareness technologies not only predicts adversary's actions, but it also encourages disruptive response to the adversary's plans or actions as preemption. The action enabling situational awareness technologies can facilitate new military options. In short, the preemptive or predictive capabilities provide information or insight into the adversary's forces while the action enabling capabilities intrinsically enables military action. In South Asia, India has already acquired these technologies which would likely encourage the Indian decision-makers to take quick military decisions both at the strategic and tactical levels. Given the vulnerability of the region, such military options can escalate a limited crisis into a full-blown conflict or turn conventional engagement into a nuclear conflict. This would likely serve as one of the most destabilizing factors for the strategic stability of the region.

For years now, India has been working for a counterforce preemption strategy against Pakistan which requires robust ISR capabilities. These capabilities would provide India with quantifiable and discernable data which would further allow it the liberty to take offensive military actions. This might embolden India to create hype about its self-proclaimed notions of 'preemptive first strikes'. Pakistan on the other hand has been following an approach of least possible countermeasures based to deal with the Indian threats. In this regard, Pakistan has indigenously developed UAVs in the year 2009 called Falco drones. Subsequently two remote sensing satellites PRSS-1 and PAKTES-1 were launched by Pakistan in 2018. Currently, Pakistan also has the indigenous developed C4ISR based system including AEWACs systems. The increasing gap vis-à-vis India's ISR capabilities further would provoke Pakistan to increase its inventory of highly sophisticated AWACS for air, spy satellites, maritime, and ground surveillance, and reconnaissance. However, Pakistan needs to optimally utilize the available resources along with smart acquisitions and tactically sound strategies. The evolved dynamics of sophisticated situational awareness technologies in South Asia would likely undermine the deterrence equilibrium in the region that has been primarily ensured by Pakistan's nuclear capability.

Hence, India's offensive military strategies and the development of surveillance and situational awareness capabilities would further add to the volatility of the South Asian region. The prevailing environment of surveillance and situational awareness landscape of the region suggests relooking at the risks and challenges of these emerging technologies, especially when employed between two nuclear-armed states. Moreover, with digital weaponry becoming the future of warfare, Pakistan needs to take measures to enhance its situational awareness capabilities and overcome this evolved Indian threat to its security. Otherwise, the Indian advancement in surveillance and situational awareness technologies would likely create a strategic imbalance in South Asia. This would have devastating implications for regional peace, security, and stability.

https://www.eurasiareview.com/16112020-surveillance-and-situational-awareness-technologies-in-south-asia-and-implications-oped/

Analyzing India's Enhanced Strategic Nuclear Triad: Implications for the South Asian Strategic Stability

Haris Bilal Malik

Since the last few years, India has embarked on an extensive augmentation of its strategic nuclear capabilities. This is primarily inspired by its long-held desire to dominate the escalation ladder of the South Asian region and extend its strategic outreach. The massive buildup of strategic nuclear capabilities is also part of India's grand strategy that is intended towards achieving the status of global power. In pursuit of this, it has carried out an overwhelming enhancement of its nuclear capabilities aimed at completing a strategic nuclear triad. Furthermore, India has been maintaining an offensive nuclear force posture along with the provision of advanced delivery systems and platforms that are capable of firing nuclear missiles. In this regard, a very robust three-pronged nuclear force structure which includes land-based, air-launched, and submarine-launched nuclear missiles form the very basis of the Indian nuclear triad. Specifically, this has become more significant given the Indian induction of sophisticated platforms to strengthen its existing nuclear triad. This is further aimed at both initiating the first strike option and ensuring a second-strike capability. India's attempt to dominate the regional deterrence equilibrium by enhancing its nuclear triad would adversely affect the strategic stability of the South Asian region.

In simplistic terms, the nuclear triad is the ability to launch a nuclear offensive from various platforms and delivery systems at air, land, and undersea. This is aimed at ensuring a three-prong offensive nuclear force posture. Air platforms are a major source of delivering nuclear warheads. In this regard, initially, India had relied on its Jaguar and Mirage 2000 jets with the provision to deliver the air-launched nuclear missiles. Later on, the Russian Sukhoi Su-30 jets were acquired by India which is also capable of delivering nuclear missiles. India has also reportedly modified 40 of these jets to carry the BrahMos supersonic cruise missiles, one of the fastest supersonic missiles currently available in the world. This has significantly enhanced India's air-based nuclear capability. Since then, these jets have been projected as the backbone of the air component of the Indian nuclear triad. Most recently, India has received the first five of its total 36 Rafale jets from France. It is widely believed that the Indian Rafales would likely be modified to play the nuclear role. Since, along with its other advanced strikes capabilities, Rafale is well known to be capable of delivering a nuclear payload. Especially against the backdrop of the humiliation which India has faced in recent crises, the addition of Rafale in the Indian Air Force (IAF's) inventory would further complement the air-based component of the Indian nuclear triad.

In the same vein, India's land-based component of the nuclear triad consists of offensive missile systems capable of delivering nuclear warheads at various ranges. In this regard, most notably, the Agni and Prithvi missiles are India's fully operational land-based nuclear-capable ballistic missiles. Especially the Agni missiles are believed to be the backbone of the Indian landbased nuclear capability. The Agni-V and Agni-VI variants of this series are reportedly Inter-Continental Ballistic Missile (ICBMs). The Agni-V of 5000 km range is in service, whereas the Agni-VI of 10000 km range is under development. This shows Indian eagerness to complete an ICBM ranged land-based component of its nuclear triad. In addition to these, there has been much hype regarding the land launched version of the BrahMos supersonic cruise missile which India has developed in collaboration with Russia. The BrahMos missile is also capable of delivering nuclear warheads with its incredible speed. India also aspires to have hypersonic nuclear-capable cruise missiles as part of its land-based nuclear capability. In this regard, the recent tests of the Shaurya ballistic missile and Hypersonic Technology Demonstrator Vehicle (HSTDV) for future cruise missiles are considerably important. Furthermore, there are also reports which suggest that India and Russia are jointly working on the BrahMos-II a hypersonic variant of this cruise missile. Though the practicality of this might remain questionable, such developments indicate that India wants to further enhance the land-based component of its nuclear triad.

It is worth mentioning here that the provision of nuclear first-strike and assurance of second-strike capability undersea is the most credible component for the completion of a nuclear triad. The naval based component appears to be the Indian priority as well. This is evident from the Indian enhancements of its naval based nuclear deterrent capabilities with the provision of nuclear-powered and ballistic missile-carrying submarines (SSBNs) and submarine-launched ballistic missiles (SLBMs). In this regard, the presence of the INS Arihant SSBN and the K-series SLBMs in the Indian naval inventory are worth considering. Especially, the K-serious has tremendous significance for India's sea-based nuclear capability aimed at completing the nuclear triad. These include; the K-15 missile (the land-based version of Sagarika missile) with a range of 700 km and the K-4 missile of 3500 km range. The long-range K-5 and K-6 missiles of 5000 and 6000 km are also under development. Along with these, the INS Arighat, India's second SSBN as reported is set to be deployed by the end of 2020. It is also believed to be capable of carrying more nuclear-capable missiles as compared to the INS Arihant. These platforms have considerably enhanced India's naval based second-strike capability and further ensured the completion of a strategic nuclear triad.

Hence at the present, India seeks to maintain a credible and reliable strategic nuclear triad in pursuit of its hegemonic designs and great power aspiration. India's nuclear triad is in large part ensured by its offensive enhancement of air, land, and undersea nuclear capabilities. Such an Indian attempt to dominate the regional deterrence equation would likely further increase the risk of instability in the region. These factors combined would have long-lasting

implications for the overall regional deterrence equilibrium that is primarily ensured by Pakistan's nuclear capability. Though, Pakistan still holds a very calculated and principled minimum credible deterrence approach, Indian eagerness to expand its nuclear triad would likely challenge the nuclear threshold of Pakistan. This would ultimately undermine the strategic and deterrence equilibrium in South Asia.

http://southasiajournal.net/analyzing-indias-enhanced-strategic-nuclear-triad-implications-for-the-south-asian-strategic-stability/

Nuclear Deterrence and Treaty on Prohibition on Nuclear Weapons

Ahyousha Khan

On October 24, 2020, the Treaty on Prohibition on Nuclear Weapons (TPNW) commonly known as the 'Ban Treaty' was ratified by fifty states. This has marked the start of a 90-day countdown for the treaty to enter into force. The Ban Treaty was concluded in July 2017 with the support of 122 countries; however, none of the NPT nuclear-weapon states has supported it. The conclusion of the ban treaty was not an instant act; rather the lack of progress by the nuclear-weapons states towards nuclear disarmament played a significant part. This has reflected the dissatisfaction and disappointment of the non-nuclear-weapon states vis-à-vis the existing international non-proliferation arrangements. These factors have played a crucial role in the formation and conclusion of the ban treaty. As a principle, the TPNW prohibits parties to the treaty from the development, testing, possession, use, and transfer of nuclear weapons along with their threatening use. Moreover, the treaty is often mixed with the "global zero" initiative but it has appeared to be more of a "political heir" of the "humanitarian impact of nuclear weapons" initiative (HINW). Therefore, it can be deduced that on paper, the logic behind the ban treaty appears to reframe nuclear weapon policies with a more focus on humanitarian aspects over security concerns.

The preamble of TPNW suggests the acknowledgment of the NPT as the cornerstone of the international non-proliferation regime. However, the NPT nuclear-weapon states have repeatedly and consistently argued against the ban treaty that it can never be a substitute for NPT. Since, the TPNW was drafted with the purpose to reframe nuclear narratives, which is a political agenda; the proponents of the ban treaty (TPNW) have never considered it as a substitute for the NPT. In this regard, the actionable steps such as "verifications mechanisms" are not significantly discussed in the treaty. Contrary to this agenda, many International experts, scholars, and practitioners are of the view that if TPNW wants to establish itself as a non-proliferation norm, it must develop a clear and detailed verification apparatus.

The political agenda to prohibit nuclear weapons deliberates that nuclear weapons are to be perceived as "illegitimate" and "unacceptable" in the international system. This notion has faced a serious backlash from the west and the TPNW is dubbed as "polarizing", "unethical" and "incompatible with NPT". Nevertheless, the very fact remains that few states have acquired nuclear weapons for deterrence, which this treaty deems as an illegal option. For instance, South Asia is one example where India had acquired the nuclear capability to dominate the region. To overcome this threat from India, Pakistan was compelled to follow the same suit. Since then, the existence of Pakistan's nuclear deterrence has been able to prevent an all-

out war in the region. Yet, the TPNW attempts to develop a new narrative around the concept of deterrence. Therefore, this aspect of TPNW, where it is dismissive about the security concerns of the states that have acquired nuclear weapons needs to be addressed and analyzed before moving forward.

Based on such concerns, it would be significant to deliberate on the importance of nuclear deterrence in ensuring survival and peace in the evolved international nuclear order. Since there is currently no existing legal norm in the international system that regards a state's right of self-defense as illegitimate. In that case, the policy of deterrence could be regarded as a legal right of self-defence. Moreover, as per Article 51 of the UN Charter, every state has a right to self-defense to ensure its survival. Similar views were expressed by the Advisor Opinion of the International Court of Justice in 1996 when the issue of the legality of nuclear weapons and deterrence was raised. The court ruled that it is the right of every state to defend itself whereas the policy of deterrence cannot be ignored which many states are adhering to in the international system. Therefore, it seems impossible to term nuclear weapons as illegal because states possess the right of survival with whatever possible means.

It is quite apparent that the Ban Treaty prohibits acquiring a nuclear weapon and aims to shift the narrative on nuclear weapons from a security perspective to a humanitarian perspective. Yet, the withdrawal clause of the treaty allows the parties to leave the treaty in case of extraordinary circumstances. This would be pertinent where the national interests of the states appear to be <u>jeopardized</u>. Furthermore, the states have the leverage to expedite this process if they get involved in any armed conflict. In a way, it seems quite admissible that in case of existential threats to their survival even the parties of TPNW can withdraw from the treaty. This further indicates that the security concerns of the states which are facing existential threats to their survival would remain the decisive factors.

Hence, the disregard for security concerns of the states is what TPNW might have learned from its predecessor non-proliferation and disarmament arrangements. Where owing to real-politic, interests, and concerns of only a few states were the dominant factors. There is a need for non-discriminatory and unbiased international non-proliferation mechanisms. Treaties like TPNW, FMCT, CTBT, and NPT would not be regarded as universal till they continue to avoid change and inclusion. The prevalent security environment of South Asia which India aspires to dominate would not encourage both the South Asian rivals to become a member of any such non-proliferation initiative. As such this would likely undermine the notions of deterrence and might be considered as an attempt to delegitimize their security concerns.

https://www.eurasiareview.com/21112020-nuclear-deterrence-and-treaty-on-prohibition-on-nuclear-weapons-oped/

Other Side of The Nuclear Coin: Pakistan's Peaceful Uses of Nuclear Energy

Sher bano

The development of Pakistan's nuclear program in the early '50s was primarily meant for peaceful purposes. Since then, Pakistan has been using nuclear technology for the socio-economic development and betterment of society. In this regard, over the years, sufficient human resources and infrastructure have been developed in compliance with the international practices of nuclear safety and security and regulatory control. This is further evident from the fact that Pakistan has achieved significant success in utilizing nuclear technology in public spheres ranging from; energy, agriculture, health, and industry. However, unfortunately, the international community, specifically the West is quite reluctant to acknowledge Pakistan's success in peaceful uses of nuclear technology. Furthermore, Pakistan has been facing discrimination from the international community at various international forums related to the use of nuclear technology. Despite this, Pakistan's successful journey of utilizing nuclear energy for peaceful purposes would likely continue in the years to come.

Pakistan Atomic Energy Commission (PAEC), established in 1956 is the pioneer government agency to oversee the peaceful uses of nuclear technology in the country. It was established to contribute to Pakistan's overall economic development through the utilization of nuclear energy in various public fields. These include; medical diagnosis/therapy, agricultural production, nuclear energy for power generation, and some other functions that involve peaceful uses of nuclear technology. In the early '70s, PAEC constructed the first-ever 135 Megawatts (MWs) nuclear power plant at Karachi KANUPP. This was also the first-ever nuclear power generation plant in the developing or underdeveloped world. The successful launch of this power plant later led to the development of four more nuclear plants at Chashma, the CHASNUPP-1, CHASNUPP-2, CHASHNUPP-3, and CHASHNUPP-4. Furthermore, Pakistan also intends to build two nuclear power plants known as K-2 and K-3 at Karachi, one at Chashma, and two at Muzaffargarh. This is part of Pakistan's long-term plan to produce 40,000 Megawatts MWs of electricity by using nuclear energy by the year 2050. Here it is quite noteworthy to specify that nuclear power generation is believed to be one of the economical and reliable sources of electricity generation. Such credentials have included Pakistan among the list of 30 countries that have fully operational nuclear plants. Along with this, Pakistan is also among the only ten countries in the world that have completed the nuclear fuel cycle.

Likewise, in the field of agriculture, nuclear technology has contributed to various landmark achievements for Pakistan. In this regard, the <u>PAEC</u> has developed multiple facilities for the advancements in the field of agriculture and food in collaboration with the IAEA. It has

also launched various programs to increase the nutritional value of staple foods so that it can meet the United Nations Sustainable Development Goals (SDGs) to eliminate malnutrition and hunger. Furthermore, various irradiation techniques have been used in the agriculture sector to enhance the quality of food and to extend the shelf life of products at the farms. Also, PAEC is working on various food fortification initiatives to enhance the vitamin and mineral content in the food and to eradicate malnutrition. This is further evident from the fact that nearly 98 new high-yielding and stress-tolerant crops have been created by using nuclear technology. For the availability of clean water in the country, PAEC for years has been collaborating with IAEA to analyze and detect pollutants in water by using isotopic and nuclear techniques. Pakistan has also built laboratories by collaborating with IAEA for mass breeding of insects that fight pests attacking the crops and thus the use of pesticides is decreased.

In Pakistan, nuclear technology has significant use in the field of medical science especially for the diagnosis and treatment of cancer disease. In this regard, over the years, 18 cancer treatment centers have been developed by PAEC where nearly 0.7 million cancer patients have been treated to date. This counts for almost 80% of the total cancer patients from all over the country. Radiation and various other nuclear techniques are used for treating cancer. Likewise, various cancer awareness campaigns are being run by the PAEC so that cancer gets diagnosed at the early stages. Other than these, PAEC has been collaborating with international organizations like the WHO, IRC, IAEA, and UICC, etc. This has facilitated the access of Pakistani scientists and doctors to the relevant international institutions and provides opportunities for training in the field of nuclear medicines. Taking part in various seminars and workshops also keeps the nuclear medical professionals updated about the latest developments in this field.

Moreover, in the field of technical industry, the Heavy Mechanical Complex (HMC) Taxila is one of the leading organizations in Pakistan's engineering sector. It works with an aim of indigenization, self-reliance, and import substitution and to give technical support to the country's industrial sector. It also focuses on enhancing manufacturing, design, testing, and inspection capabilities to produce high-tech parts, components, and equipment for the thermal, hydel, and nuclear power plants and alternate energy projects. It is a state-of-the-art facility for forging, fabrication, machining, welding, and heat treatment. It is Pakistan's first engineering establishment that is certified by PNRA (Pakistan Nuclear Regulatory Authority) to develop Nuclear Safety Class 1, 2, and 3 components and equipment in the country.

Hence it is quite comprehensible that Pakistan has successfully demonstrated its commitment towards using nuclear energy for the socio-economic development of the country. This implies that there is another side of the nuclear coin of Pakistan's nuclear program and that is the peaceful use of nuclear technology. Based on this, the international community needs to admit Pakistan's continuous efforts of compliance with the international practices of nuclear safety and security and regulatory control. The international arrangements like the NSG

and other such cartels, which are supposed to facilitate and promote the peaceful uses of nuclear energy, need to acknowledge Pakistan's achievements in this regard. The grant of NSG waiver to India while ignoring Pakistan's outstanding track record in peaceful uses of nuclear technology has raised questions on the credibility of international arrangements. There is a dire need for openness to new contenders with a non-discriminatory approach. Last but not the least, there should be discrimination between proliferation and peaceful uses of nuclear technology at the international level.

http://southasiajournal.net/other-side-of-the-nuclear-coin-pakistans-peaceful-uses-of-nuclear-energy/

Pakistan's Credible Minimum Nuclear Deterrence in Contemporary Regional Context

Haris Bilal Malik

The overt nuclearization of the South Asian region in 1998 was the outcome of the Indian long-held desire to dominate the region and challenge Pakistan's security. Being threatened by this, Pakistan was compelled to follow the same suit. It became more of a strategic obligation for Pakistan to develop its nuclear capabilities given the evolved regional security dynamics. This had primarily balanced the regional equation of nuclear deterrence that exists to date as well. Since then, the existence of nuclear deterrence in South Asia which is primarily ensured by Pakistan's deterrence posture remains the most significant determinant of the regional strategic balance. However, in recent years, India has been incessantly trying to undermine the strategic parity in the region by challenging Pakistan's nuclear threshold which covers various spectrums of threats. This is significantly evident from; India's extensive and provocative military modernization both at the conventional and unconventional levels, self-proclaimed notions of 'surgical strikes' and 'new normal' under the nuclear scenario, and the gradual shifts in its doctrinal posture. These factors combined have emerged as the most destabilizing factors that have contributed towards challenging Pakistan's credible minimum nuclear deterrence in the contemporary regional context.

While pursuing a massive military modernization drive, at the unconventional level, India has enhanced its strategic nuclear capabilities with the acquisition of advanced ballistic and cruise missiles that can be launched from land, air, and under the sea. Furthermore, it has indigenously developed ballistic missile defence (BMD) systems along with the S-400 antimissile system that it has purchased from Russia. This is aimed at the provision of an advanced air defence shield. The nuclear-powered submarines that assure the second-strike capability have further added to the Indian offensive military posture. India has developed supersonic missiles which are operational; while the hypersonic missiles are reportedly under development. Moreover, India has also carried out technological advancements in the domain of space with the acquisition of anti-satellite (ASAT) weapons. These capabilities are aimed at achieving a presence in space for intelligence, reconnaissance, and surveillance (ISR) purposes. In this regard, the recent India-US 'Basic Exchange and Cooperation Agreement' (BECA) is also evidence of such offensive posturing against Pakistan. This implies that India's expansion of its military capabilities is aimed at enhancing the strategic nuclear capabilities vis-à-vis Pakistan.

In recent years, India's notion of the preemptive first strike also referred to as 'splendid first strike' has gained considerable deliberation within the Indian strategic community. As the Indian security experts have maintained, such a splendid first strike would be based on a

nuclear resort. In addition to this, the self-proclaimed phenomena of 'surgical strikes' under a nuclear scenario have become part of Indian strategic discourse. This has been portrayed as a 'new normal' by the Indian political and strategic elite. India believes that any provocation in line with such notions would not challenge Pakistan's nuclear threshold. Furthermore, the resultant conflict would likely stay at the sub-conventional or even conventional level only. Inspired by such notions, at the doctrinal level, India has been shifting from its declared policy of 'No First Use' (NFU). Especially in the Post- Pulwama environment, this has been witnessed with a deliberate assertion of the Indian Defence Minister. He hinted at a likely shift in India's declared NFU policy by maintaining that its status would depend on future circumstances. These evolved Indian notions along with its shift in the doctrinal posture further support Pakistan's already expressed doubts regarding India's NFU policy. Hence more, this denotes that India has been continuously trying to undermine the deterrent value of Pakistan's nuclear posture. This would ultimately destabilize the South Asian region.

Pakistan, on the other hand, has been forced to maintain a certain nuclear force posture to reinstate the balance of power in the region. In this regard, Pakistan's full spectrum deterrence (FSD) that is in-line with the <u>credible minimum nuclear deterrence</u> posture has been a key resort to overcome the conventional and unconventional challenges being posed by India. Pakistan has embarked upon very timely and calculated responses under its missile development program. These include; tactical, intermediate, and long-range delivery systems capable of delivering nuclear warheads. Furthermore, the development of land, sea, and air-based advanced cruise missiles along with the assurance of second-strike capability has further added to Pakistan's resort to respond. As opposed to India's blatant NFU policy, which appears barely justifiable and provable at face value, Pakistan has never maintained such an assertion. In this regard, Pakistan has kept its resort of nuclear first strike quite ambiguous. This is aimed at ensuring Pakistan's security and preserving its sovereignty while staying within a credible and reliable nuclear deterrence doctrine. Such posture implies that Pakistan's nuclear deterrence is defensive in principle which aims to deter India from taking any aggressive action against Pakistan.

Hence at present, India's aggressive military modernization along with its hostile notions of 'surgical strikes' and 'new normal' under nuclear scenarios have posed security threats to Pakistan. India's expansion of its strategic nuclear capabilities against Pakistan is a clear manifestation of its offensive doctrinal posture. This along with the conventional advantage of India appears to be a more focused attempt to undermine Pakistan's credible nuclear deterrence. This has created a dangerous environment of strategic stability in the South Asian region. Pakistan, on the other hand, while having limited financial resources and conventional disadvantage vis-à-vis India has always relied on its nuclear capability. The fact remains that Pakistan's nuclear capability has been able to deter India from any misadventure. In the contemporary regional context, the credible nuclear deterrence of Pakistan would continue to

remain an appropriate resort. However, India's deliberate exertions to challenge Pakistan's security might provoke a review of doctrinal posture.

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