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India's Missile Development and Regional Arms Control

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Abstract

The South Asian security landscape has been influenced by India's relentless pursuit of missile development and modernization. This research critically analyze the growing arsenal of India, its ballistic missiles, cruise missiles, and new hypersonic technology. It also analyze how the missile race destabilizes the region and makes the process of arms control more complicated while also analyze the implications for Pakistan. The paper argues that India's missile development and nuclear modernization under the pretext of countering China, which inadvertently results in a reactive dynamic in Pakistan, however, India's missile range is not restricted to South Asia, which means that its prestige-oriented logic has resulted in the qualitative and quantitative improvement of its missile resources. It is this action-reaction loop that drives an arms race, undermining strategic stability, enhancing crisis instability, and escalating risks, especially in a region already defined by historical tensions and nuclear rivalry. The paper also examines how these developments pose a setback to regional arms control efforts and confidence-building efforts, which eventually contribute to South Asian insecurity. The paper, through an empirical and policy-oriented study, highlights the need for renewed dialogue and arms control measures to curb the destabilizing effects of missile competition in South Asia.

Keywords Arms Control, Hypersonic Missiles, Ballistic Missiles, MIRV, Brahmos, South Asia, Anti-Satellite

Introduction

Intense security rivalries, historical conflicts, and a convoluted interaction of nuclear deterrence and conventional military asymmetry have long characterized South Asia. In recent decades, these dynamics have been further compounded by a pronounced missile race, spearheaded by India's accelerated development and diversification of its missile arsenal (Kampani, 2003). India's missile modernization trajectory has significantly altered the regional strategic calculus from short- and intermediate-range ballistic missiles like the Agni series to sophisticated cruise missiles like BrahMos, and ongoing ventures into hypersonic and anti-satellite (ASAT) capabilities (Davenport, 2019).

While Indian policymakers frequently frame these developments as necessary to counterbalance China's growing military capabilities, the most immediate and intense, effects of this missile buildup are felt in Pakistan. However, most of India's missile ranges go beyond South Asia, to mainland Europe and the USA, indicating prestige-driven rather than security concerns (Hussain, 2004). Given the historically adversarial relationship and repeated crises between India and Pakistan, both declared nuclear powers, Pakistan perceives India's missile advancements as a direct threat to its national security and strategic deterrent posture. Consequently, Pakistan has embarked on its missile development efforts, including the Shaheen, Babur, and Nasr series, to ensure credible minimum deterrence. This action-reaction dynamic perpetuates an arms race that escalates defense spending and deepens mutual suspicion and strategic mistrust (Shan, 2023).

This evolving missile competition has deep implications for regional stability in South Asia. Introducing advanced missile systems reduces decision-making time during crises, increases the risks of miscalculation and accidental escalation, and undermines the fragile deterrence equilibrium. Furthermore, as India has been investing in dual-capable delivery systems and shifting toward counterforce strategies, the likelihood of crisis instability rises, threatening to transform limited confrontations into full-scale conflicts with potentially catastrophic consequences (Dhanda, 2011).

Beyond its impact on bilateral stability, the Indian missile race poses substantial challenges to broader arms control and non-proliferation efforts in South Asia and a threat to global strategic stability. Confidence-building measures (CBMs) and various dialogue initiatives have struggled to gain traction in an environment dominated by growing technological asymmetries, politics of hate, and mutual insecurity (Dhanda, 2011). India's strategic partnership with major powers and access to advanced missile and space technologies further exacerbate these challenges, dampening regional arms restraint and cooperative security prospects (Miglani & Das, 2019).

India's missile modernization has been influencing Pakistan's strategic posture and the broader security architecture of South Asia. By examining doctrinal shifts, technological trends, and crisis scenarios, the study highlights how the missile race contributes to strategic instability and impedes the development of effective arms control frameworks in the region. Moreover, without sustained dialogue, transparency measures, and regional arms control initiatives, the ongoing missile race risks entrenching a volatile security dilemma that threatens long-term peace and stability in South Asia (Akram & Mir, 2025).

Indian Missile Development and Regional Arms Race

India's missile development has emerged as a central driver of the arms race in South Asia, with its ambition to be recognized as a global power and a net security provider in the Indo-Pacific region. India has pursued an expansive and technologically sophisticated missile program. Since the 1980s, India has steadily developed various ballistic and cruise missile systems under the Integrated Guided Missile Development Programme (IGMDP), starting with the Prithvi and Agni series. Over time, India has diversified and extended the range of its missile arsenal, including the development of the Agni-V intercontinental ballistic missile (ICBM), submarine-launched ballistic missiles (K-15 and K-4), and air- and sea-launched cruise missiles such as BrahMos and Nirbhay. India's current efforts also include developing MIRV-capable systems, hypersonic weapons (BrahMos-II), and the canisterized launch capability of strategic missiles, which enhances launch readiness and survivability (Kakar, 2023).

These missile modernizations have had a destabilizing impact on South Asia's strategic environment. India's development of Ballistic Missile Defence (BMD) systems, including the indigenous two-tier system (PAD and AAD) and the acquisition of the S-400 Triumph from Russia, directly challenges the principle of mutual vulnerability that underpins nuclear deterrence. India's BMD encourages first-strike temptations and undermines crisis stability. In response, Pakistan has been compelled to diversify its missile arsenal, with a strong emphasis on countermeasures designed to defeat or saturate India's missile defenses. This includes the development of cruise missiles like Babur and Ra'ad, MIRVed ballistic missiles like Ababeel, and tactical nuclear weapons such as Nasr (Jaspal, 2024).

The missile competition between India and Pakistan follows an action-reaction dynamic, whereby one side's technological advancement prompts the other to respond to maintain a credible deterrence. For instance, India's testing of Agni-2 was quickly followed by Pakistan's development of Shaheen-1, and India's Cold Start Doctrine spurred the induction of Pakistan's short-range Nasr missile. The Indian Navy's development of sea-based nuclear deterrents through the INS Arihant and its K-series SLBMs forced Pakistan to initiate its sea-based deterrent program, culminating in the Babur-3 submarine-launched cruise missile. These reciprocal developments highlight the entrenched nature of the arms race and the difficulty of achieving stability without mutual restraint (Summar, 2024).

A particularly dangerous feature of the missile arms race is the dual-capable nature of many missile systems. Missiles capable of delivering both conventional and nuclear warheads introduce ambiguity during crises, heightening the risks of misperception and inadvertent escalation. During the 2019 Pulwama-Balakot crisis, India threatened the use of missiles, and Pakistan vowed to respond in kind. In such high-stakes confrontations, dual-use systems may be mistaken for nuclear weapons,

triggering pre-emptive strikes and escalating a conventional skirmish into a nuclear exchange. Moreover, India's operationalization of second-strike capabilities at sea through SSBNs poses additional command and control challenges and increases the risk of unauthorized or accidental launches, thereby further undermining crisis stability (Gill, 2023).

List of Indian Missiles

Name of the Missile	Sub-category of Missile	Types/launch platform (short)	Launch date (test/event)	Operational range (public reporting)	Speed (public reporting/category)
Agni-Prime (Agni-P)	Medium-range ballistic missile (MRBM)	Surface-to-surface; canister-launched; road-mobile	June 7 2023 (first pre-induction night launch)	~1,000–2,000 km (reported).	Ballistic re-entry speeds; exact Mach not publicly disclosed.
BrahMos (supersonic cruise missile)	Supersonic cruise missile (anti-ship / land-attack)	Ship/land/air/sub variants (tested ship-launched in 2023)	March 5 2023 (Indian Navy — ship-launched test reported)	Standard ~290 km (extended variants reported higher).	~Mach 2.8–3 (supersonic).
Agni-Prime (follow-up test)	Medium-range ballistic missile	Surface-to-surface; canisterised	03–04 Apr 2024 (pre-induction / user trial)	~1,000–2,000 km (as above).	Ballistic (exact speed not publicly given).
Akash-NG (New-Generation Akash)	Surface-to-air missile (SAM)	Medium-range air-defence (ground mobile)	January 12 2024 (flight-test vs UAV)	~70–80 km (New-generation/medium-range class reported).	Supersonic / high-subsonic interception speeds (system spec ≈ Mach2+-class interceptors).
Nirbhay (long-range cruise / ITCM)	Subsonic cruise missile (long-range)	Land/sea/air variants under development/testing	April 18 2024 (flight test with indigenous Manik engine)	~1,000 km (reported for long-range cruise variant).	Subsonic (~Mach 0.7–0.9 typical for Nirbhay class).
RudraM-II (Rudram-II)	Air-to-surface anti-radiation / strike missile	Air-launched from Su-30MKI (anti-radiation / ground-attack)	May 29 2024 (flight-test from Su-30MKI)	Not specified in the brief official release (development / user-trial).	Reported supersonic variant; exact published speed/range varies by sources.
Long-range hypersonic missile (DRDO)	Hypersonic missile/glide vehicle (long-range HGV class)	Surface-launched developmental hypersonic system (DRDO)	November 16 2024 (DRDO flight-trial)	1,500 km (MoD/DRDO press release stated designed for ranges greater than 1,500 km).	Hypersonic (Mach >5; exact Mach not published).
Long-range cruise missile (LR-LACM / LRLACM — maiden)	Long-range cruise missile / LACM	Land/mobile cruise missile (developmental)	November 12 2024 (maiden test reported)	1,000 km (reporting described a 1,000 km-class LACM).	Subsonic / cruise class (exact speed not always published).
MRSAM (Army version / Barak-MRSAM)	Medium-range surface-to-air missile (MRSAM / Barak-8 family)	Ground-based air-defence (Army version)	03–04 Apr 2025 (four successful operational flight-tests)	70 km interception envelope reported (operational intercept range ~70 km).	High-supersonic interception capability (system family; exact missile Mach varies).
BrahMos	Supersonic	Air-launched	07–10 May	Standard ≈290 km	~Mach 2.8–3

	cruise missile	(Sukhoi/Rafale integration) / land/sea)	2025 (Operation Sindoor — operational strikes/launches reported)	(extended ER variants and operational configs reported greater reach in some reporting).	(supersonic).
SCALP-EG (Storm Shadow / SCALP cruise missile)	Long-range subsonic cruise missile (Western origin, MBDA)	Air-launched (Rafale) used in Operation Sindoor	May 7 2025 (reported use in Operation Sindoor)	>250 km (public reporting on Storm Shadow / SCALP family ranges).	Subsonic (~Mach 0.7–0.9).
Akash Prime (high-altitude Army trials)	Surface-to-air missile (upgraded Akash variant)	Army high-altitude air-defence (wheeled launcher)	July 16 2025 (high-altitude trials in Ladakh; 2 aerial targets intercepted)	System-spec ranges similar to Akash family (operational details not always published); user trials validated performance at >15,000 ft.	Interceptor speeds are consistent with the Akash family.

Source: Data collected from DRDO, DefenceXP, and the Ministry of Defense Production

The ongoing missile buildup has also significantly eroded the prospects for arms control in South Asia. Pakistan has repeatedly proposed a Strategic Restraint Regime (SRR) that includes mutual agreements on nuclear restraint, conventional force balance, and conflict resolution mechanisms. However, India has consistently rejected these proposals, opting for unilateral strategic advancements. Without structured arms control frameworks or crisis management mechanisms, South Asia remains vulnerable to miscalculation and escalation. While confidence-building measures (CBMs) such as pre-notification of ballistic missile tests and non-attack agreements on nuclear facilities exist, they are limited in scope. New CBMs such as agreements on cruise missile test notifications, avoiding incidents at sea, and establishing communication protocols for naval nuclear forces are urgently needed.

India's missile development has played a critical role in intensifying the arms race in South Asia, forcing Pakistan to engage in a costly and technologically complex response to maintain strategic balance. This action-reaction cycle undermines arms control efforts and strategic stability in the region. India tests Agni-IV, a ballistic missile that can travel up to 4000 kilometres. The test was conducted from Chandpur. The Agni-IV missile, with a payload of 1000 kg, can reach targets beyond 4000 kilometres, making it a significant catalyst for the missile race in South Asia (Srishti, 2024.). The missile was first tested in 2012, with a range of 3000 kilometres, and the latest development highlights a significant improvement. The Strategic Forces Command of India, which oversees the country's nuclear weapons, is responsible for managing and administering these missiles. India's Air Force and Navy also possess these ballistic missiles (Ganguly, 2024). Although India claims that its threat is emanating from its two neighbors, Pakistan and China, the missiles' range extends beyond these countries. India expanded its nuclear and missile program by testing long-range inter-continental ballistic missiles like Agni-IV range (4000-4500) km, Agni-V(5500) km, and Agni-IV (12000-16000) km, having the potential to reach Europe such as Russia, Sweden, Denmark, and Greece, which are not necessarily enemies, but potential targets for these missiles which significantly threatens regional stability, global peace and arms control regimes (Negi, 2024). The range and targets are a matter of concern for the international community and arms control regimes (Kakar, 2023).

The Agni missiles' capabilities have raised concerns and debates about India's strategic intentions and potential conflicts with its neighbours (Cheema, 2024). India's nuclearization of South Asia, massive conventional military buildup, un-safeguarded nuclear material, misuse of civilian nuclear technology, and modernization of nuclear-capable missiles (while having a history of accidentally firing nuclear-capable cruise missiles) collectively lead to strategic instability in the region (Kashyap, 2023). The accidental or intended firing/misfiring has raised serious concerns about

technical faults and safety operating procedures, the command and control system of India's missile program.

India's pursuit of advanced missile capabilities has taken a significant turn, with the July 20 2025 revelation that the Defense Research and Development Organization (DRDO) is modifying the Agni-V intercontinental ballistic missile (ICBM) to carry a massive 7,500 kg conventional warhead, instead of a nuclear payload. This development follows the June 21 2025 U.S. strike using Massive Ordnance Penetrator (MOP) bombs against Iran's underground nuclear facilities at Fordow and Natanz, an event that seemingly inspired Indian strategists to replicate such a capability for South Asia. Additionally, the India-Pakistan Non-Attack Agreement of 1988, which prohibits attacks on each other's nuclear facilities, provides a historical arms control framework that this new Indian missile may undermine. These developments indicate how recent global events and long-standing regional agreements are directly influencing India's missile modernization, which raises serious concerns about the erosion of strategic stability and the risk of nuclear escalation in South Asia (Akhtar, 2025).

India's missile modernization, particularly the conventional variant of the Agni-V platform, exhibits a shift in strategic thinking with dangerous implications for regional arms control. The Agni-V, which was originally showcased as a nuclear-capable ICBM during a display in New Delhi on January 23 2013, is now being transformed into a dual-use system capable of launching both nuclear and high-explosive conventional warheads. This transformation significantly blurs the line between conventional and nuclear strategy, increasing the risk of misinterpretation during a crisis. The concern is amplified by India's previously stated No First Use (NFU) policy, which was already brought into question by former Indian National Security Adviser Shiv Shankar Menon in his book, Choices: Inside the Making of India's Foreign Policy (Menon, 2016). His statements suggest that India might consider first use under certain circumstances, which can further erode trust and reinforce Pakistani skepticism about India's nuclear posture.(Cheema, 2024)

Furthermore, the May 2025 crisis appears to have reinforced Pakistan's urgency to enhance its deterrence survivability and early-warning systems. Lessons from global nuclear rivalries, particularly during the Cold War and modern-day U.S.-China dynamics, reveal that counterforce temptations such as India's development of a bunker-buster Agni-V variant are destabilizing. These moves prompt states like Pakistan to adopt 'use-it-or-lose-it' doctrines, increasing the likelihood of pre-emptive nuclear use under perceived existential threats as Pakistan continues to invest in survivability through systems like the Babur-3 submarine-launched cruise missile and road-mobile launchers. The timeline of these technological advancements, especially in 2025, marks an important moment. It signals a reactive posture to Indian missile development and a deepening entrenchment in the South Asian arms race (Kimball. 2022).

US-India Space Cooperation fuels its missile development.

The space cooperation between the United States and India has been far-reaching, although indirectly, in the development of India's missile program. There is a profound overlap in space and missile technologies of propulsion, guidance, navigation, re-entry, telemetry, materials, and high-precision electronics (Khan et al., 2024). Thus, the spillover of knowledge, access to cutting-edge elements, and the reinforcement of institutional and industrial ecosystems tend to advantage missile-related projects even in those cases when the cooperation is confined to the civilian or business spheres. This process has been accelerated in the past two decades by the change in U.S. policy from limiting access of India to sensitive technologies to providing a chance to cooperate (Miglani & Das, 2019).

The biggest policy advances were made in 2016-2018. In June 2016, India became a member of the Missile Technology Control Regime (MTCR), which, in addition to securing a legitimate position in the world technology regimes, lifted restrictions on the sourcing of missile technology components and materials by member states. During the same year, the U.S. also declared India to be a Major Defense Partner and officially pledged to treat India at the same level as the closest allies regarding the sharing of defense trade and technology. In July 2018, India was lifted to Strategic Trade Authorization Tier-1 (STA-1), and the restriction on the export of sensitive dual-use goods (advanced avionics, high-precision sensors, and microelectronics) was eased. These three landmarks provided a favorable atmosphere under which India was able to obtain technologies, legally and smoothly, that are inseparable not only to civilian space programs but also to augment the accuracy, reliability, and sophistication of its missile systems (Speier, 2024).

In addition to the change in policy, the actual collaboration in the field of space brought tangible technological and institutional advantages to India. As an example, the U.S.-India partnership in the Global Positioning System (GPS) and India's satellite-based augmentation system (GAGAN/NavIC) enhanced India's access to accurate positioning, navigation, and timing (PNT) information (Kashyap, 2023). These data would be crucial in missile guidance systems and in the calibration of instrumentation applied in the testing of ballistic missiles and cruise missiles. Similarly, collaborative scientific missions, including Chandrayaan-1 (2008), on which NASA instruments were flown on board an Indian lunar mission, and the flagship NASA-ISRO Synthetic Aperture Radar mission (NISAR), a 1.5 billion dollar earth-observing radar satellite, bolstered Indian experience in high-resolution radar, systems integration, and mission engineering. Such experiences allow the acquisition of technical knowledge that can be implemented in the telemetry of missiles, tracking, and test analysis (Stroikos, 2023).

The U.S and international alliances were also helpful in the emergence of India as a commercial launch provider. The number of foreign satellites launched by ISRO increased to 393 between 2015 and 2024, which became the volume of its operations and demanded enhancement of the quality assurance of products, testing of avionics, propulsion systems, and an increase in industrial production capacity (Kashyap, 2023). The same processes form the basis of the reliability of missile production and deployment. In addition, the expanding U.S.-India manufacturing relationships under programs like the Initiative on Critical and Emerging Technology (iCET) and working with American semiconductor and space startups provided the Indian companies with the opportunity to receive the latest microelectronics and sensors, as well as guidance technologies. Indian companies and defense organizations could now more readily have access to these components as export restrictions were relaxed under STA-1, and are directly associated with raising the sophistication of missile avionics and guidance systems (Kashyap, 2023).

The missile program in India has felt these developments in a number of places. First, better guidance and navigation with the help of GNSS cooperation made the Indian missile system more precise, especially the cruise missile and longer-range ballistic missiles. Second, space missions have upgraded telemetry, radar, and remote-sensing capabilities that have reinforced India's capacity to test and refine missile designs with a high degree of accuracy (Davenport, 2019). Third, more liberal U.S. export controls and easier access to dual-use material and components hastened the creation of native subsystems, and incremental expansion of launch services enhanced the industrial ecosystem of India to support complex rocketry and avionics. Moreover, the training and exposure that Indian engineers underwent in large-scale joint space missions established a human capital base competent in systems engineering competence, which can also be applied in missile development (Narloch, 2021).

It is noteworthy that the U.S.-India cooperation has, however, not been characterized by the transfer of designs and offensive technologies of the missiles. The ballistic missile program of India is mainly localized, and Russia had assisted India in the previous years in certain fields such as cryogenic propulsion. The U.S aid has been indirect as it has mostly been as a result of civil space cooperation and alterations in trade regimes. However, analysts and arms-control experts have repeatedly issued warnings that space cooperation with India is increasing its missile capabilities due to the dual-use nature of the technologies involved. These issues point toward the fine line between nurturing scientific cooperation and avoiding unwanted military uses (Hussain & Ahmed, 2019).

Conclusively, U.S.-India space cooperation has enhanced the Indian missile program not by direct transfer of missile technology, but by creating an ecosystem, that supports high-end rocketry, guidance, and industrial scaling. The alteration of policy, like the membership of the MTCR, major defense partner, or the designation of the STA-1, eliminated restrictions on technology flows (Banerji, 2023). Hands-on knowledge in radar and systems engineering missions, such as NISAR, availability of GPS data, and state-of-the-art semiconductors enhanced missile navigation and avionics. All these developments have cumulatively led to India developing an accelerated indigenous missile capability, which is more accurate and reliable, and as such has transformed the strategic balance in South Asia (Huma, 2025).

A Great Power with Global Reach

India's missile modernization and nuclear posture are entrenched in its broader ambitions of achieving great power status. Its evolving doctrine, driven by a desire to act as a "net security provider" in the Indian Ocean Region, is fundamentally power maximizing. India's development of a broad spectrum

of missile systems from short-range Prithvi missiles to long-range Agni-series reflects this aspiration (Kampani, 2003).

American analysts often ignore India's space-military integration, including its $3 billion space-based surveillance program, which aims to launch 52 satellites to enhance maritime and land domain awareness. This surveillance architecture directly supports India's missile systems and strengthens its command and control capabilities for strategic weapons (Banerji, 2023). India's development and testing of Agni-V (5,000–8,000 km range) and Agni-VI (8,000–10,000 km range), both with the potential to reach deep into continental Europe and even parts of the United States, contradict the narrative that India's deterrent is China-specific. By definition, these intercontinental systems signify intent beyond regional balancing. Ironically, Narang and Vaddi wrote, "No other country with ICBMs that can target the United States is considered a friend." Still, they conveniently omitted India's capability from their calculus, exhibiting a problematic analytical inconsistency (Vipin and Pranay, 2024).

According to Malinda Meegoda, the Asia-Pacific region is witnessing a structural shift in arms racing dynamics, with India's missile program emerging as a key driver. While the sale of BrahMos missiles to the Philippines gained significant attention as part of India's Make in India defense initiative, concerns were raised over the dual capabilities of the system (Meegoda, 2022). The export variant supplied to the Philippines remains within the Missile Technology Control Regime (MTCR) limit of under 300 km. Yet another BrahMos variant tested by India in February 2024 reached a range of 900 km, blurring compliance boundaries. This technological flexibility, paired with India's MTCR membership, bolsters its credibility as an arms exporter but also raises questions about long-term proliferation risks. Moreover, advancements, if mirrored by states like Myanmar, which cooperate with North Korea, could destabilize the region (Meegoda, 2022). By providing advanced missile systems to partners such as the Philippines, India not only expands its strategic footprint but also shifts the balance in sensitive maritime disputes, particularly in the South China Sea. India's ability to enhance missile ranges, as seen in its BrahMos development, represents not only a leap in indigenous capability but also a potential challenge to regional arms control frameworks, given the absence of a binding treaty on ballistic missiles beyond voluntary regimes like MTCR and the Hague Code of Conduct (HCoC) (Sawami, 2024).

Nuclear-Conventional Entanglement

A major challenge is that many Indian missiles are dual-use, blurring the line between conventional and nuclear warfare. Several Indian systems (Agni series, BrahMos, Nirbhay) can carry either nuclear or conventional warheads (Herald, 2024). This creates ambiguity when radar detects an incoming missile; Pakistan cannot know immediately if it is armed conventionally or with a nuclear warhead. This could provoke miscalculation. For example, a conventionally-armed BrahMos strike on Pakistan could be misread as a nuclear first strike, triggering a catastrophic response. Indian military thinkers have also openly discussed counterforce uses of conventional weapons against nuclear forces. A study notes that within India's defense community, there is "widespread support" for attacking an adversary's nuclear or dual-use launchers with conventional strikes, indicating a blurred policy boundary (Clary, 2023). Public statements from Indian officials have grown ambiguous on NFU, hinting that the doctrine could shift under threat (Clary, 2023). Indian missiles themselves have acquired higher accuracy (tens of meters CEP, which analysts interpret as unnecessary for countervalue (city destruction) but consistent with counterforce targeting. This trend raises concerns that India is leaving open the option of preemptive nuclear strikes, even as it professes NFU (Akram & Mir, 2025).

Moreover, this entanglement complicates crisis dynamics. No reliable nuclear redline exists, and short flight times leave little reaction time. The 2025 India–Pakistan crisis showed the risk; it was a mix of conventional missiles and drones fired on both sides, all under the nuclear umbrella (Akhtar, 2025). Policymakers face acute ambiguity: for instance, India's BrahMos is officially nuclear-capable, but some sources dispute whether nuclear BrahMos variants exist (Kristensen et al., 2024). Pakistan similarly fields cruise and ballistic missiles that could be nuclear, but cannot telegraph intent (Clary, 2023). To manage this, both sides rely on Hotlines and partial notifications, yet as noted, even these have been unevenly used (Matamis, 2024). Moreover, India's dual-capable missile forces and limited CBMs mean that conventional crises carry an ever-present nuclear overhang, making escalation management fraught.

Policy and Doctrinal Ambiguity

India's official policy, a No First Use (NFU) doctrine and commitment to credible minimum deterrence, coexist with modern military enhancements. Since India's 1999 nuclear doctrine, leaders have stressed retaliation only if nukes are used against India. However, recent statements and writings have sown doubt. Former generals and strategists have advocated more flexibility, and some senior leaders have hinted that NFU may not be immutable. For example, in 2019, Defense Minister Rajnath Singh reaffirmed NFU but said its future "depends on circumstances (Clary, 2023). Meanwhile, Indian policy documents (e.g., the 2015 Maritime Security Strategy emphasize a robust triad and credible second-strike at sea (Khan, 2024). New doctrines like the proposed "Integrated Rocket Force" reflect an official shift to give conventional standoff missiles a clear role, partially to relieve pressure on the nuclear force (Khan, 2024).

However, experts like Chirosotpher Clary generally see India hedging between minimal deterrence and counterforce capabilities (Kimball, 2022). Moreover, he also argued that India still talks of massive retaliation and unacceptable damage, suggesting a countervalue emphasis, yet its weapon developments (precision, MIRVs, high readiness) point to counterforce ambitions (Clary, 2023). Moreover, they also highlight the tension that India declared no arms race yet continues an incremental buildup, which means that India's stated minimum deterrent will be evolving into a larger force (Khan, 2024).

Pakistan's official doctrine (2003) openly calls for full-spectrum deterrence, meaning conventional counterstrike and tactical nukes to deter any Indian aggression. Pakistani experts frequently warn that India's missile buildup tilts the balance and threatens Pakistan's strategic assets (Khan and Haider, 2024). Many independent security analysts and observers believe that Indian leaders will continue expanding missile forces, which fuels the regional instability and paves the way for an arms race.

South Asian Strategic Environment and Proliferation Concerns:

The recent rapid development and modernization of missiles by India has added a new dimension to the problem of regional stability and arms control. It directly undercuts the disarmament process, especially regarding Pakistan's long-standing call for a South Asian Restraint Regime (Sagan, 2001). India has rejected Pakistan's suggestion to replace a missile race with measures of confidence-building, missile, and conventional arms control. India's expansion in missile capabilities may lead to the same reaction from Pakistan to restore balance, triggering an arms race in South Asia. The impasse in a substantive arms control discourse between the two countries raises concern over the region's prospects. This may, in one way or another, significantly reduce the prospects of further arms control accords, thereby increasing regional instability (Rana, 2018).

The world, especially the United States, has paid little attention to India's military modernization while considering India a strategic partner against China. While the U. S. has sanctioned Turkey for buying the same S-400 system from Russia, it has not done the same to India, which shows that there are some strategic considerations at work. The U.S. considers India a net security provider in its Indo-Pacific strategy and a counterbalance to China; hence, the U.S. turns a blind eye to India's expanding missile capabilities (Kliman et al., 2019). This preferential treatment is unhelpful to the global arms control process since it creates a precedent that enables strategic partners to escape scrutiny. For South Asia, the implications are stark: This policy of the U. S. indirectly encourages India to increase its military might, which in turn increases Pakistan's security dilemma and reduces the chances of achieving arms control or disarmament in the region (Xiang, 2025).

Impacts on Regional Arms Control and Stability

India's accelerated missile development and export activities, especially since its Missile Technology Control Regime (MTCR) membership, have introduced new challenges for regional arms control. The sale of BrahMos cruise missiles to the Philippines while technically within MTCR limits at under 300 km range contrasts sharply with India's February 2024 test of a 900 km range BrahMos variant, raising compliance concerns. Such dual-capability platforms blur the line between conventional and strategic weapons, undermining transparency and making verification under voluntary regimes more difficult (Kimbal, 2024).

The absence of a binding global treaty on ballistic and cruise missiles means these developments are managed only through voluntary frameworks like the MTCR and the Hague Code of Conduct (HCoC), the latter not even covering cruise missiles. This regulatory gap allows states to

incrementally enhance missile ranges and payload capacities, as seen in India's BrahMos program, without formally violating agreements. For regional rivals like Pakistan these advancements heighten the perception of an evolving Indian counterforce capability, potentially prompting reciprocal measures and accelerating the South Asian arms race.

India's growing missile development has a ripple effect on regional stability. By providing advanced missile systems to partners such as the Philippines, India not only expands its strategic footprint but also shifts the balance in sensitive maritime disputes, particularly in the South China Sea. This arms diffusion risks encouraging other states such as Myanmar, reported in March 2024 to be cooperating with North Korea to pursue similar capabilities, potentially including reverse engineering for extended range or re-export. Such trends erode the spirit of arms control, heighten crisis instability, and make the introduction of new regional missile norms an urgent necessity.

Pakistan Stance on Arms Control

Pakistan strongly advocates for arms control, non-proliferation on all multilateral forums and continues to support international peace and security (Khan and Haider, 2024). On November 2 2023, the 193-nation assembly's First Committee (Disarmament and International Security) adopted Pakistan's four annual resolutions to strengthen regional and international peace and security. Admittedly, the resolutions dealing with regional disarmament and conventional arms control have little practical outcome. For instance, India voted against conventional arms control because it is equipping its armed forces with state-of-the-art imported weapons. It has been claimed that a stable and peaceful world is only possible in a system that is fair and based on laws. A strong non-proliferation regime is an important element of such an order (Kristensen & Korda, 2022). Pakistan, being a responsible state, fully endorses the objectives of nuclear non-proliferation and arms control measures at regional and global levels, as they are in the interest of peace and security for all humanity (Shaheen & Askari, 2024).

Since the first nuclear test in South Asia in 1974, Pakistan has always put forward such steps to prevent the region from nuclear weapons and missile systems. These proposals included the application of IAEA safeguards to all of the nuclear facilities of the two countries, the bilateral inspection regime, and the simultaneous membership in the NPT, the regional CTBT, the Zero Missile Regime, and the Non-Aggression Pact. However, these initiatives have not been reciprocated (Matamis, 2024). Due to increasing security threats, Pakistan built nuclear deterrence for its defense and, following the 1998 nuclear tests, offered the SRR, which is the nuclear and missile restraint, conflict management, and conventional parity to maintain permanent peace in the South Asian region.

Pakistan believes that the process of disarmament and non-proliferation should be universal and does not discriminate against the security concerns of states. The current global security environment requires compliance with the principles of the First Special Session on Disarmament of the United Nations General Assembly held in 1978, which underlines the right of every state to equal security (Akhtar & Neog 2024). Thus, Pakistan believes that real disarmament can only be achieved with the help of providing a favorable international security environment and solving the pre-existing regional conflicts, which force states to possess nuclear weapons (Matamis, 2024). As a proactive member of the non-proliferation and arms control regime, Pakistan aims to positively contribute to forming a fair regime that would help maintain a fair and just regime for all states (Pattanaik, 2023).

Pakistan maintains that global disarmament and non-proliferation efforts must consider the security concerns of all states, ensuring an inclusive, non-discriminatory regime. It calls for adherence to the principles outlined in the First Special Session on Disarmament (SSOD-I) of the United Nations General Assembly (1978), which emphasizes the right of every state to undiminished security without discrimination. For Pakistan, the key to genuine disarmament lies in creating a secure international environment and addressing long-standing regional conflicts that drive states to develop nuclear capabilities. As an active partner in global non-proliferation, Pakistan seeks to contribute meaningfully towards a regime that balances the security interests of all states, thereby creating a fair and peaceful world (Akhtar & Neog 2024).

Hence, the international community should adopt an objective approach when dealing with strategic matters. Providing a special waiver to India and limiting Pakistan's capabilities alone pose challenges to strategic stability and peace in the region. India's growing capabilities and its missile development are increasing Pakistan's security dilemma, forcing it to develop such capabilities for its security, as aforementioned (Matamis, 2024).

Conclusion

New South Asian strategic equilibrium has tremendously changed with India embarking on intensive modernization of its missiles typified by long range ballistics such as the Agni-5, the emerging MIRV and canister, the K-4 SLBM, the emergence of hypersonic, and the development of deeply penetrating bunker-buster models. In 2025 yearbook, SIPRI reveals that India is increasing its nuclear capability and is now estimated to have approximately 180 warheads against the 170 of Pakistan, which is steadily increasing, a growing technological and numbers advantage. Although these developments have strengthened the deterrence posture of India, they also significantly extend beyond the amount required to deterrence with respect to Pakistan and China, indicating hidden prestige-based motivation.

The greater complexity - including MIRV-enabled Agni-5 and canisterized platforms - makes survivability and readiness more likely, but poses the risk of generating countermeasures. Indicatively, the very action-reaction spiral of arms control is demonstrated by the moves of Pakistan itself, to create the Ababeel MIRV-capable missile. Expansion of new technology such as the K-4 SLBM with a 3500km range further strengthens the second strike ability of India but overstretches the restraint mechanisms of the region. The nature of the emerging hypersonic capabilities in India, with their dual-capable, ambiguous characteristic, signally serves to compress decision timelines by as much as an order of magnitude-increasing the risks of escalation and surpassing current CBMs. Worsening the situation, traditional solutions, including building of strong bunker-buster missiles with range of 80 meters underground, have enhanced further the Pakistan insecurities regarding its ability to endure a nuclear attack on its command infrastructure. On a continuum of missiles, India has continued to drift out of Habitual regional armament management and displays individual power over general stability.

The direction of the Indian missile development, to a large extent, past the demonstration of the deterrence necessities concerning the real threat, can be interpreted as a prestigious message on a strategic level. It raises India to the rank of a near-global power, able to go beyond its own immediate neighborhood, but at the expense of a weak balance of regional arms control. To promote the establishment of stability, it is certainly necessary that India and Pakistan needs to modernize their systems of building confidence, which means enhancing pre-notification regimes, broadening definitions to cover cruise, hypersonic, and MIRV payloads, and making more disclosure regarding the classes of payloads. The absence of such a course of action can lead to further development of the arms race in the region in the direction of insecurity, undermining the logic of deterrence and allowing the possibility of strategic miscalculations.

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