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Research Paper | Indian Military Theatre Commands: Implications for Deterrence Stability in South Asia

Syed Ali Abbas

Abstract

The establishment of integrated military theatre commands in India is a significant restructuring of the country's defence forces, with tangible consequences for Pakistan's security. The reform will bring the integration of the Army, Navy and Air Force into Joint Command Forces that can operate fast and on multiple domains, on the basis of previous ideas like the Cold Start doctrine and the Integrated Battle Groups (IBGs). The developments are potentially destabilising because they compress the traditional response time, reduce the time limit for crisis decision-making and enhance the risk of limited military response under the nuclear overhang scenario for India. By enabling faster and more coordinated offensive options, India's Theaterisation deepens Pakistan's security dilemma and raises concerns about rapid, limited strikes that could exploit reduced warning time. The paper discusses the implications of Indian theatre commands for deterrence stability in South Asia. It argues that Pakistan will likely respond with enhanced inter-service integration, better intelligence, surveillance and reconnaissance (ISR) and continued evolution of its Full Spectrum Deterrence posture, to deny India the space for limited war. The methodological approach used in the study is qualitative analysis, which is based on official statements, institutional reforms, public statements, and open-source strategic assessments. The analysis finds that while India is moving toward greater operational efficacy and jointness, Theaterisation may also raise crisis instability, quicken escalation risk, and further complicate the strategic stability in South Asia.

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Link: <https://margallapapers.ndu.edu.pk/index.php/site/article/view/376>

Research Paper | Pakistan's Approach Towards the Prevention of Arms Race of Outer Space (Paros): Gaps in Global Space Governance

Amna Saqib & Syed Ali Abbas

Abstract

Outer space, long regarded as a domain for peaceful exploration, has increasingly become entangled in geopolitical competition and emerging military doctrines. The growing integration of dual-use technologies, anti-satellite (ASAT) capabilities, and space-based defense systems has undermined the civilian-military distinction, exposing critical shortcomings in the existing legal architecture, particularly the 1967 Outer Space Treaty (OST). These developments threaten strategic stability, especially in regions like South Asia, where power asymmetries and a lack of transparency exacerbate risks. This paper examines Pakistan's legal and strategic position on the weaponization of space, highlights its consistent advocacy for binding norms, equitable access, and non-militarization through multilateral forums such as the UN and the PAROS initiative. It argues that current voluntary regimes are insufficient to manage the complexity of modern space threats and calls for a revised governance framework that includes verification mechanisms, addresses legal gaps, and reflects the concerns of emerging spacefaring nations. Moreover, the study contributes to a broader understanding of how middle powers can shape inclusive, rules-based space governance in an era of intensifying competition.

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Link: <https://jcs.ndu.edu.pk/index.php/site/article/view/409>

**Research Paper | The Great Power Competition and the Proliferation
Strategy of Lethal Autonomous Weapon Systems:
A Strategic Funneling Approach**

Muhammad Ali Baig

This research paper explores the ongoing strategic competition between the United States (U.S.), China, and Russia in the development and proliferation of Lethal Autonomous Weapon Systems (LAWS). It introduces ‘Strategic Funneling’ as an analytical approach that explains how states accelerate military modernization by concentrating resources, institutions, and innovation toward specific technological objectives. The study argues that this approach provides a useful analytical framework for examining how great powers prioritize resources, innovation, and policy instruments to accelerate LAWS development through both vertical and horizontal proliferation. In doing so, it contributes to the growing literature on military AI, strategic competition, and emerging military technologies. The study employs qualitative analysis of primary and secondary sources, including Convention on Certain Conventional Weapons (CCW) documents, official government publications, academic literature, and policy reports, to examine patterns of LAWS development, proliferation, and governance among the selected case studies. Both types of proliferation, i.e., horizontal and vertical, were examined through the lens of strategic funneling, which each country used and considered in the process. This in-depth study helps identify artificial intelligence (AI) as a key element of LAWS. The nexus between AI and LAWS – which includes the enabling, governance, deployment, and proliferation of these weapon systems – is currently under discussion. The findings in this study suggest that the U.S. emphasized technological dominance, China pursues LAWS under its peaceful rise policy, and Russia relies on asymmetric innovation and adaptive procurement. One common feature is that they are all accelerating their acquisition of LAWS through proliferation.

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Research Paper | Missiles, Deterrence, and Asymmetric Warfare: Assessing Iran's Strategic Response to Israel

Syed Ali Abbas

Missiles have emerged as a central instrument of contemporary asymmetric warfare, particularly for states operating under conditions of conventional inferiority, external pressure, and sustained strategic competition. This paper examines Iran's missile program as a case study of how a conventionally constrained state can develop and employ stand-off strike capabilities to offset technological and force asymmetries against a militarily superior adversary. It situates missile power within the broader logic of asymmetric warfare, emphasizing cost-exchange advantages, extended reach without air superiority, survivability through mobility, and the capacity to impose retaliatory costs at distance.

The study traces the evolution of Iran's missile development from its origins in the Iran–Iraq War, when exposure to Iraqi missile strikes highlighted the absence of long-range retaliatory capacity. This became the core pillar of national defense shaped by sanctions, diplomatic isolation, and limited access to advanced airpower. Within the context of the Iran-Israel rivalry, the paper highlights the pronounced disparity in conventional capabilities between the two states and analyzes how Iran has employed missile forces to impose costs, signal resolve, and sustain deterrence under technological disadvantage. It argues that missile-centric strategy can provide a credible substitute for advanced conventional platforms, enabling a weaker state to protect sovereign interests and shape adversary calculations in asymmetric interstate rivalry.

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Research Paper | India's Post-May 2025 Crisis Military Modernization: Implications for Crisis Stability in South Asia

Fakhar Alam

The crisis stability in South Asia remains severely fragile, given the nature of India-Pakistan relations. The May 2025 post-Pahalgam four-day conflict has further highlighted the challenges for regional crisis stability. Since the nuclearization of South Asia, India has been trying to carve out a space for a limited war under the nuclear overhang against Pakistan. New Delhi's continuous efforts to carve out space eventually led to its adoption of the Dynamic Response Strategy. The May 2025 India-Pakistan conflict saw India's partial implementation of the Dynamic Response Strategy and simultaneously revealed some limitations for New Delhi. India is now modernizing its military to overcome those limitations. The research paper employs the conceptual framework of crisis stability to analyze the key aspects of India's post-Pahalgam military modernization. It examines the developments related to an integrated and multi-layered air defence network, advancements in missile technology, the restructuring of the Indian army deployed along Pakistan's border and the Line of Control and developments related to drone-based surveillance and drone-based precision strike capabilities. India perceives that these developments will enhance its capacity to effectively escalate conflict horizontally under the nuclear overhang with controlled escalation. The study finds that the aforementioned military modernizations simultaneously incentivize India for a first strike, encourage pre-emptive strike temptations, strengthen counter force targeting capabilities and deepen conventional-nuclear entanglement, thereby creating implications for the crisis stability in South Asia.

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Op-ed | From Indo-Pacific to the US Pacific: A Setback for India's Strategic Ambitions

Nawal Nawaz

The US Department of War has decided to rename the US Indo-Pacific Command (USINDOPACOM) to its previous designation, the US Pacific Command (USPACOM). It indicates that the United States seeks to honor the command's historical identity and institutional legacy, fostering collective spirit among all who serve in the Pacific. While the geographic scope, strategic mission and the command's operational responsibilities remain unchanged, the drop of "Indo" from Indo-Pacific Command raised questions in New Delhi about Washington's commitment to the Indo-Pacific concept and the Quad grouping that includes India. Even if symbolic or administrative, such a change could be interpreted as signalling ambiguity in US Indo-Pacific prioritisation, affecting regional perceptions

The reported renaming of USINDOPACOM back to USPACOM, whether symbolic or administrative, highlights the importance of nomenclature in shaping strategic perceptions in international politics. While such a change would not necessarily indicate a structural shift in US Indo-Pacific strategy or its commitments under frameworks such as the Quad, it could generate interpretive uncertainty among regional stakeholders, particularly India, which has invested significantly in the Indo-Pacific narrative as a pillar of its great-power aspirations

The USPACOM was established in January 1947 by then President Harry S Truman, and it served for more than seven decades as the oldest and largest unified command. The USPACOM played a critical role in shaping the security architecture of the post-World War II era. Until this latest change, the command is responsible for fostering defense partnerships and maintaining regional security across the wider Indo-Pacific, extending from the US West Coast to India's western border.

The USPACOM was retitled as US Indo-Pacific Command (USINDOPACOM) in 2018, signalling Washington's acknowledgement of geopolitical, geoeconomic and geostrategic intercourse of the Indian Ocean region with the Pacific Ocean region. For New Delhi, this development held paramount significance as USINDOPACOM served as a significant institutional channel, fostering defense cooperation with Washington. Under the umbrella of a broader Indo-Pacific framework, the command promoted increased US-India military engagement which includes joint exercises, maritime coordination and strategic cooperation. However, the recent development of removing "Indo" from the US Indo-Pacific command's title has provoked strong reactions from Indian

strategists and scholars. In New Delhi, this renaming of nomenclature has been interpreted as a shift in messaging around the US Indo-Pacific strategy.

The Indo-Pacific concept emerged to create a single strategic theatre, reflecting economic and military interconnectedness between the Indian and Pacific Oceans. Under this concept, India emerged as a significant player in Indo-Pacific, maintaining a balance of power amid China's ascendancy. In 2018, the Pacific Command was renamed as the "Indo Pacific" command to strategically recognize the pre-eminence of New Delhi in the evolving regional security calculus. Symbolism holds strategic significance in international politics, and for India, this framing of nomenclature is much more than a geographical concept, serving diplomatic validation to growing Indian aspirations of becoming a major power within Asia and beyond.

New Delhi has successfully raised its diplomatic stature by capitalizing on the benefits of Indo-Pacific narrative, grabbing a prominent seat at the major regional initiatives while strengthening the country's influence in key strategic arrangements like QUAD— a quadrilateral alliance between Australia, India, the US and Japan. Through this narrative, India projected itself as a major stakeholder in ensuring a free, open and rules-based order in the Indo-Pacific region.

However, a change in nomenclature reflects that the US, now, aspires to focus on the Pacific theatre instead of a broader Indo-Pacific region. Though the change of command appears administrative in nature, the policy circles are interpreting this change in terms of the downgrading of India's centrality in the strategic thinking within the US policy circles. The inclusion of "Indo" in the US Pacific Command was not a cosmetic measure rather it showed a conscious effort to accentuate India's role within the regional security architecture. Suffice it to say, its removal creates uneasiness in Delhi regarding the durability of the command's commitment.

The timing of the decision is worrisome for New Delhi as it comes amid the rebalancing of ties between Beijing and Washington. The change in the name of the US military formation came a little more than a fortnight after the US defense secretary's speech at the Shangri-La Dialogue, held in Singapore, where Pete Hegseth claimed the US "return to realism" in the Pacific while chalking out a new course for the US alliances and partnerships in the region, "rooted in the realities of power and interests." In response to this US move, Indian Navy chief Admiral Arun Prakash criticised the US policies as unreliable and poorly thought.

"Whatever ephemeral morale boost might come from the renaming is entirely outweighed by the symbolic damage done to US ties with the most populous country on the planet," said Christopher Clary, an associate professor of political science at the University at Albany. He further stated that

“The renaming is senseless. It is reasonable for sceptics to wonder whether the goal is to appease China, which seems to be the recurrent feature of this administration’s policy in Asia.” Already the US-India ties are under stress, given tariff disputes between two states, and tensions over Delhi’s energy ties with Moscow.

Some questions need to be addressed to delve into the relations between the linguistic interpretation of the terms and real strategic interests. Does the title of the command reflect the US geo-strategic and geo-political interests? If the title means so, then the rebranding of the USINDOPACOM into USPACOM reflects the strategic shift in the US foreign policy, omitting the values of the Indian Ocean region. Second question, if the title of the command does not reflect the strategic interpretation, then why does the US need to rename it? It might demonstrate that the US no longer play wedge strategy between China and India, signaling a shift in the US strategic interest in the Indian Ocean region.

However, with Washington’s shift from this terminology, the effectiveness of the most important diplomatic frameworks could weaken through which New Delhi has projected itself as a security provider in Indo Pacific region. This change of heart in the US strategic thinking reflects Trump administration’s intentions to recalibrate their strategic focus away from Indo Pacific to the areas that pose immediate security challenges. This development could serve as a reminder for New Delhi, reflecting the limitations of external validation. Though New Delhi has reaped the rewards from its growing partnership with the US, down the road country cannot bet solely on American policies or perceptions

For Pakistan, this policy move creates diplomatic space, allowing Islamabad to project itself as a valuable economic and logistic partner. The change of nomenclature would reduce international support for narratives, perceiving India as a regional net security provider in the Indian Ocean region. Islamabad can capitalise on this opportunity by engaging with other regional powers without being viewed through the lens of the US-India strategic partnership. Moreover, this softening of framework could reduce pressure on China- centric regional alignments, allowing greater diplomatic manoeuvrability and renewed geostrategic relevance. Therefore, this rebranding has broader implications for the narrative underpinning the Indo-Pacific concept. The Indo-Pacific concept was instrumental in projecting India as sole regional security provider in the Indian Ocean region and the return to USPACOM raises questions about the future American foreign policy priorities. This development does not reflect collapse of Indo-Pacific strategy nor the end of US-India strategic cooperation yet the disappearance of “Indo” from one of the important

geopolitical frameworks affects perception and in geopolitics perceptions shape the future as much as power itself.

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Op-ed | India's Space Setback: The Costs of Consecutive Launch Failures

Areesha Manzoor

Outer Space exploration is a complex and risky phenomenon where even the launch of a satellite or a payload may not be the benchmark of success. Instead, the success of the space mission is determined by the stated objectives, payload effectiveness, system performance, and the technical outcome of the project. India's space program, which it claims is mature and a symbol of national power, could not mark the foremost check box of a successful mission (launch). The Indian Space Research Organization (ISRO) portrayed the Polar Satellite Launch Vehicle (PSLV) as the backbone of India's space missions and a reliable and cost-effective launch service for international customers. The failure of PSLV launches, twice in eight months, raised questions about the credibility, reliability, and sustainability of India's launch capability.

In May 2025, the PSLV-C61 vehicle failed to launch the EOS-09 surveillance satellite with Synthetic Aperture Radar (SAR) into its desired orbit. In January 2026, the PSLV-C62/ EOS-N1 mission failed to launch the Earth Observation Satellite EOS-N1 and 15 other co-passengers from other countries. Consecutive failures of the "workhorse" of the Indian space program are a setback to the nation's space ambitions. It raises doubts about the country's operational preparedness and technical capacity. It has implications beyond technical embarrassment and the years of hard work involved in developing satellites going into a vein. For a country that aims to hold a place in the space industry, failure of a mission affects its international trust and strategic objectives.

The most immediate loss of failed missions is financial. The destruction of EOS-N1, along with 15 payloads, resulted in the loss of significant financial investment. The estimated loss of PSLV-C61 is ₹450-500 crore, and PSLV-C62/EOS-N1 and payloads are 650-750 crore. The total cost of five failed missions, since 2021, is ₹2,200-2,800 crore (approximately \$265-335 million). This amount is equivalent to 15% of ISRO's 2025-26 budget of ₹24,000 crore.

This is not just a financial loss, but it also costs India lost opportunities. India had generated revenue of \$100 million from foreign ride-share payloads. However, countries like Nepal and Brazil have cancelled future projects with India, resulting in a \$50-70 million revenue loss for FY26. There is a continuous decline in India's share in the global small-satellite launch market from 35% in 2017 to nearly zero by 2024- 2025. It depicts declining trust in the commercial arm, NewSpace India Limited, of the Indian Space Research Organization.

The global space economy is a highly competitive field where trust and reliability are decisive factors. When international payloads are lost during launch failures, satellite operators may reconsider their future launch choices, particularly when alternative providers offer more dependable services. Private launch companies such as SpaceX have already intensified competition in the commercial launch sector. High launch frequency and reusable rocket technology by SpaceX have reduced the cost of launch while offering reliability. Recurring failures of Indian space missions bring reputational damage and undermine its wish to be a major commercial space partner in the global launch industry.

There are also technological implications of recurring failure. It does not only mean the loss of the rocket and payload. The reliable and smooth functioning of the space program is dependent upon a careful sync of satellite development, mission planning, and launch windows. Launch failures cannot be brushed under the carpet and entail extensive investigations, engineering reviews, and redesign processes. Failure often leads to delays in future missions, slowing the deployment and interrupting technological progress. The probe into the causes of fault in the third stage of PSLV slowed down the progress of future launches, Gaganyaan-G1.

Moreover, India has lost Earth Observation (EO) Satellites that could have added to Indian security architecture. The loss of the EO satellites with Synthetic Aperture Radar (SAR) and failure of other satellite launches over the years reflects that India is losing ground in geospatial intelligence. The latest PSLV-C62 mission lost EOS-N1, equipped with hyperspectral imaging technology that captures data across hundreds of spectral bands. It could have detected subtle differences in material composition and surface characteristics. If it entered its orbit successfully, it could have assisted in identifying military installations, logistical infrastructure, and terrain features. The loss of EOS-N1 therefore delays the integration of advanced hyperspectral intelligence into this broader surveillance network. In a nutshell, India's space ambition contradicts its credibility, as it has faced consecutive failures in launching space missions over the course of the last five years. Failed missions do not only mean the loss of satellites, but their implications go far beyond. Indian commercial space missions carried an international payload of fifteen countries. Setbacks in space missions carry more than immediate financial and technological loss. It also delays future missions and challenges the strategic goals as well. Most importantly, it undermines the trust and reliability of Indian commercial launch services.

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Op-ed | Pakistan-Bangladesh Relations: From Historical Tensions to Economic Pragmatism

Syed Ali Abbas

For decades, though originally a part of the same state, geographic neighbours, Pakistan and Bangladesh nevertheless remained diplomatically distant. The lingering legacy of 1971, deep-rooted political divisions, and India's regional influence strained Pak-Bangladesh relationship. However, shifting regional dynamics and political transitions have opened the door for a much-needed recalibration of ties. The forced removal of Awami League government was major factor in this change. Reinforcing this shift, former Bangladesh Foreign Affairs Adviser Touhid Hossain stated that there was no longer any justification for strained ties with Pakistan, signaling a growing recognition among Bangladeshi officials of the need to reset historically strained bilateral relations.

Unlike past engagements that have been shaped by historical grievances, the evolving Pakistan-Bangladesh relationship is now increasingly driven by emerging realities. This includes expanding trade exchanges, growing military diplomacy, and high-level diplomatic exchanges, reflecting a growing recognition of mutual economic benefits. China's economic footprint plays a pivotal role in the shift in the Pakistan-Bangladesh relationship, as it remains the major trading partner for both states. The Belt and Road Initiative (BRI) and the prospective expansion of the China-Pakistan Economic Corridor (CPEC+) offer significant economic incentives that could gradually override past animosities. At the same time, India's waning regional influence raises and strain in their relationship with Bangladesh which could be a precursor of a new South Asian regional order. If economic imperatives take precedence over political matters, Pakistan and Bangladesh could experience a transformational shift in their bilateral relationship. This, in turn, may reshape South Asia's regional order, where economic interdependence can replace historical divisions as the primary force driving cooperation and stability.

Political Transition in Bangladesh: A Window of Opportunity

Bangladesh's changing political landscape is reshaping its foreign policy priorities, signaling a potential shift in regional dynamics. Under Sheikh Hasina's decade-long leadership, Dhaka aligned itself with New Delhi, creating deep strategic and economic ties with New Delhi, while keeping diplomatic engagement with Pakistan minimal. However, her departure in August 2024, following allegations of election rigging and mass protests, has set the stage for a more independent and diversified foreign policy approach.

Bangladesh's interim government initiated a more autonomous foreign policy that diversified Dhaka's external engagements beyond its traditional strategic orientation. This opened new diplomatic channels, including renewed engagement with Pakistan and enhanced cooperation with China. The diplomatic shift became particularly evident in December 2024, when Pakistani Prime Minister Shehbaz Sharif met Bangladesh's interim Chief Adviser Muhammad Yunus on the sidelines of the Developing-8 Organization for Economic Cooperation Summit in Cairo. Their discussions focused on trade, energy cooperation, and maritime connectivity, marking an important step toward enhancing bilateral relations. A breakthrough followed with the revival of direct cargo shipping between Pakistan and Bangladesh, the first such maritime link since 1971. Pakistani vessels were once again permitted to call at the Port of Chittagong, reducing reliance on indirect shipping routes and facilitating bilateral trade. The normalization process has continued under Bangladesh's elected government. In 2026, Dhaka sent a delegation of senior civil servants to Pakistan's Civil Services Academy for executive leadership training, the first structured bureaucratic exchange of its kind in decades, reflecting growing institutional cooperation between the two countries. This also reflects a growing realization that cooperation outweighs historical grievances, paving the way for a more pragmatic and mutually beneficial relationship.

Beyond Trade: The Rise of Military Diplomacy

Beyond trade, military diplomacy is also gaining momentum, signaling a broader shift in Pakistan-Bangladesh engagement. In early 2025, a Bangladesh Army delegation visited Pakistan to discuss joint training programs, defense cooperation, and potential military technology transfers, a significant departure from Dhaka's previous reluctance to engage in security collaboration with Islamabad. Adding to this momentum, reports indicate that Bangladesh is considering acquiring JF-17 Thunder fighter jets, jointly developed by Pakistan and China, as part of its Forces Goal 2030 military modernization plan. If materialized, this deal would diversify Bangladesh's defense procurement beyond its traditional partners and mark a milestone in defense cooperation. These developments reflect Dhaka's growing strategic flexibility, reinforcing the notion that economic pragmatism and security interests are gradually overriding historical hesitations in shaping the future of Pakistan-Bangladesh relations.

China and Strengthening Pak-Bangladesh Ties

China's role in shaping Pakistan-Bangladesh relations cannot be ignored. China's growing economic footprint in South Asia has become a key driver of Pakistan-Bangladesh engagement,

promoting regional connectivity and trade integration. As the largest trading partner of both states, Beijing has actively promoted regional economic integration through its Belt and Road Initiative (BRI), reshaping the economic landscape. Bangladesh's trade with China surged to about \$24 billion in 2023, surpassing its trade volume with India, which stood at \$18 billion. China's extensive infrastructure investments in Bangladesh, including the Padma Bridge, Dhaka Metro Rail, and the Karnaphuli Tunnel, have significantly improved trade efficiency and strengthened Bangladesh's position as a regional economic hub.

If Dhaka moves closer to Pakistan by joining CPEC+, it could transform regional trade, granting direct access to Central Asia via Gwadar and Karachi ports, significantly reducing dependency on India-centric trade routes. Meanwhile, Pakistan has already benefited from over \$65 billion in Chinese investments through CPEC, strengthening maritime trade, industrial zones, and energy security. A formal Bangladesh-Pakistan integration into this framework could reshape South Asia's trade architecture, creating an alternative regional supply chain that bypasses India's traditional economic dominance. For Pakistan, closer economic ties with Bangladesh serve two key objectives: diversifying trade partnerships and reducing India's strategic influence over Dhaka. As Bangladesh balances its economic engagements while securing long-term trade benefits, China's strategic role in promoting a Pakistan-Bangladesh economic corridor could redefine the regional power balance.

India's Waning Influence in South Asia

For years, India has exerted strong influence over Bangladesh, with Sheikh Hasina's government serving as a key regional ally. However, recent shifts suggest New Delhi's dominance is fading, as Dhaka actively diversifies its diplomatic and economic engagements. Bangladesh's deepening trade ties with China and Pakistan indicate a deliberate effort to reduce its reliance on India. Moreover, India's hesitation to fully engage in regional trade initiatives, such as the Bangladesh-China-India-Myanmar Economic Corridor (BCIM), has driven Bangladesh to explore alternative economic partnerships. If Dhaka fully integrates into CPEC+ and expands its economic cooperation with Pakistan, it could significantly diminish India's role in shaping South Asian economic dynamics, marking a potential realignment in South Asia's economic order.

A Path Forward: Institutionalizing Economic Integration

While Pakistan and Bangladesh engagement is strengthening, its long-term sustainability requires institutional frameworks and confidence building measures. Strengthening cultural exchanges,

academic collaborations, and diplomatic initiatives will be important in increasing trust and mutual understanding between the two states. The foundation for this new phase of engagement has already been established through tangible steps that demonstrate growing economic and diplomatic cooperation between Islamabad and Dhaka. Recent developments signal a new era of cooperation. In February 2025, direct trade resumed for the first time since 1971, with Pakistan's first government-approved cargo shipment reaching Bangladesh. This was reinforced by a trade agreement finalized for Bangladesh to import 50,000 tons of Pakistani rice, and the establishment of a Joint Business Council to facilitate economic cooperation between the two states.

Beyond trade, education and mobility have also improved. Pakistan has extended 300 fully funded scholarships to Bangladeshi students, while visa restrictions have been eased, making travel between the two states more accessible than ever before. To institutionalize this economic cooperation, both states must formalize trade agreements under regional frameworks like the South Asian Free Trade Area (SAFTA). Reducing tariffs and expanding maritime trade routes beyond Karachi-Chittagong to include Gwadar, Mongla, and other seaports could unlock new trade corridors, enhancing a more integrated and efficient regional economic network. Engagement in SAARC, the D-8, and BRI-related forums will further solidify their economic partnership, while joint energy projects, LNG terminals, and infrastructure development will maximize economic interdependence. The evolving relationship between Pakistan and Bangladesh is a transition from historical alienation to pragmatic cooperation, driven by economic necessity rather than ideology. As China's role in regional trade expands and India's traditional dominance faces challenges, Pakistan-Bangladesh economic cooperation could redefine South Asia's regional economic order. If Islamabad and Dhaka remain committed to prioritizing trade and investment over historical divisions, they have the potential to enhance a more balanced, economically integrated South Asia, where economic pragmatism, rather than political rivalry, shapes the future of regional engagement.

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Op-ed | How India's Military Modernization is impacting Strategic Stability in South Asia

Shahwana Binte Sohail

The Stockholm International Peace Research Institute (SIPRI) Yearbook 2025: Armaments, Disarmament and International Security has laid out developments in military expenditures, technological trends and arms production. The chapter titled “World nuclear forces” shows an increase in Indian nuclear weapons. The study reveals that India has around 190 nuclear warheads as compared with approximately 180 in the previous SIPRI assessment, while continuing to modernise its strategic forces. Beyond the modernization of the number of warheads, the new modernization also includes advanced delivery systems, new technologies and improved capabilities. The developments are part of a wider move to modernize India's strategic stance, focusing on enhancing deterrence through technological advancements and versatility. This article argues that the growing number of nuclear weapons and sophistication of strategic forces in India is altering the deterrence calculus, sharpening strategic competition, and raising new challenges to crisis stability in South Asia. Beyond expanding its nuclear arsenal, India is investing in a range of advanced strategic capabilities. Recent advancements include testing of Multiple Independently Targetable Re-entry Vehicle (MIRV) technology, further development of longer-range ballistic missiles, an increase in Indian nuclear submarines, rail-based nuclear weapon testing, and deployment of long-range sea-launched ballistic missiles (SLBM). Collectively, these developments demonstrate that India's modernization strategy is increasingly focused on enhancing the survivability, flexibility, and effectiveness of its strategic forces.

One important challenge in South Asia is how such capabilities impact strategic perceptions. How adversaries interpret military assets is as important as the assets themselves for deterrence. As one state gains more accurate delivery systems, builds more robust command structures and demonstrates more flexibility of operations, the other state is likely to reassess the strategic balance of the two. Such perceptions can have an impact on defence planning, even if there is no immediate threat of conflict. The development of MIRV technology is a case in point. MIRV technology allows a single ballistic missile to carry multiple independently targetable warheads, enabling simultaneous strikes against different targets. The successful test of the MIRV-equipped Agni-V ballistic missile by India in March 2024 underscored the nation's strategic prowess and precision long-range strike capabilities. In addition to increasing operational flexibility, MIRV technology also makes it harder to intercept ballistic missile defence because it allows for multiple warheads

to be launched on separate paths, which makes them harder to intercept. These capabilities can also enhance counterforce options by enabling more precise attacks on an adversary's strategic assets while maintaining adequate warhead numbers to deter an enemy. From Pakistan's point of view, these developments, along with India's ongoing investments in ballistic missile defence, hypersonic weapons and advanced intelligence, surveillance and reconnaissance (ISR) capabilities, instil doubts that India's force structure may be evolving towards a counterforce posture incrementally over time. This type of perception, regardless of actual intent, can further exacerbate strategic competition and reduce crisis stability in South Asia.

India's sea-based nuclear capability also needs to be taken into consideration. It is building a fleet of nuclear-powered ballistic missile submarines (SSBN), which helps to improve the survivability of its second-strike capability, an important aspect of credible deterrence. However, once more capable sea-based nuclear forces come into the picture, there is more complexity in crisis management. During a crisis, it is harder to distinguish between conventional and nuclear operations of naval forces. Some doubts about submarine operations and anti-submarine warfare may increase the chances of miscalculations, particularly in the northern Indian Ocean, where both nations are beefing up their maritime operations. India's investments in developing its advanced conventional capabilities also influence the strategic environment. The increase in defence spending has facilitated the purchase of advanced combat aircraft, long-range precision strike systems, integrated air and land missile defence systems, and hypersonic weapons. These perceptions may lead both sides to increase their force posture, creating an action-reaction circle, thereby raising strategic competition.

An example of this challenge is ballistic missile defence (BMD). While it is impossible for any missile defence system to provide absolute security in the event of a nuclear attack, having a missile defence system can have an impact on strategic thinking. If one side believes that part of an adversary's retaliatory capability can be intercepted, the other may respond by increasing the penetration capability, number and survivability of its strategic forces. It does not always lead to more security, however, but to an ongoing process of military adaptation. The same is true for the development of hypersonic weapons, which will shorten warning times and make it harder to make early-warning and decision-making during crises.

The development of the Agni-VI missile is the latest step in India's strategic modernization efforts. The Agni-VI, which is expected to be able to carry multiple independently targetable re-entry

vehicles (MIRVs), may improve India's flexibility of strikes and payload, as compared to its predecessors. If operationalized, these capabilities would reinforce perceptions of a more sophisticated, survivable, and flexible nuclear force. From a deterrence point of view, this will enhance India's second-strike capability, while adding additional uncertainties to the strategic landscape in the region. These developments could signal a transition towards more advanced and potentially destabilizing strategic capabilities, heightening strategic rivalry and deterrence dynamics in South Asia, especially for neighbouring nations like Pakistan.

The developments have significant implications for Pakistan's deterrence posture. Pakistan has always maintained its security policy of credible minimum deterrence and not numerical parity. But deterrence is not a static concept. The changing nature of military technologies causes states to evaluate their existing military capabilities against the need for strategic stability. It is therefore possible that India's ongoing modernization will have an impact on Pakistan's defence planning, which is seeking to preserve the credibility of its deterrent in a changed strategic environment. The military modernization and, advanced strategic technologies and conventional military expansion, have a cumulative impact on the complexity of crisis management. A future crisis is unlikely to resemble those of previous years. New technologies that enable greater use of real-time intelligence, precision-strike and quick decision-making can shorten the time for political leaders to take in information and manage escalation. In such an environment, misperception or technical error would have serious strategic consequences even if neither side wants to start a major conflict.

Therefore, as the military continues to be modernised, strategic risk reduction mechanisms should be improved. The enhancement of crisis communication mechanisms, strategic stability and nuclear risk-reduction measures are still key elements in bilateral dialogue aimed at enhancing the predictability of nuclear situations. As both countries are ramping up their presence in the Indian Ocean, maritime confidence-building measures are also critical. A more open attitude towards military doctrines and technologies would also help to minimize the risk of misunderstanding during times of heightened tension. India's military modernization is reshaping the strategic landscape of South Asia. The question is not so much whether India should modernize its armed forces, but what the net effect of all these capabilities will be on regional deterrence and crisis stability. Sustainable regional security will not rely on military superiority, but on maintaining strategic restraint and enhancing crisis-management capabilities and credible deterrence on both sides. If these are not considered, future crises may be more challenging to handle and strategic

stability may become more vulnerable to technological competition, as it may be more difficult to maintain.

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Op-ed | France's Nuclear Gamble and Changing European Security Architecture

Maryyum Masood

When Emmanuel Macron stood at the Île Longue submarine base in March 2026 and announced that France would extend its nuclear deterrent to willing European partners under what he called “forward deterrence,” the applause was understandable. Europe needed reassurance as New START expired, the transatlantic alliance visibly frayed under the leadership of Donald Trump, and Russia-Ukraine war was now in its fourth year. Nine countries have signed on, including Belgium, Denmark, Germany, Greece, the Netherlands, Poland, Sweden, the United Kingdom and, most recently, Norway. The optics are quite impressive. The material is much more opaque. France has not declared that it will keep nuclear weapons in friendly countries permanently, and retains sole right over any such decision. The discussions, planning and exercises will involve partner countries, with France indicating that security in Europe is becoming increasingly linked with security of France. In simple terms: Nine countries are in an agreement where its main pledge – what the country actually would do and when – is intentionally vague. It is a choice that has consequences which transcend the immediate security calculations of Europe.

The NATO Problem

France has had a checkered history with the NATO nuclear architecture. In 1966, Charles de Gaulle withdrew France from the integrated military command of the Alliance, just to maintain the French nuclear sovereignty. It was only in 2009 that France completed its reintegration. That history is important because France remains outside of the NATO Deterrence programs, such as the Nuclear Planning Group, where the United States coordinates its nuclear deterrent with other allies and shares targeting doctrine, and maintains the credibility of extended deterrence via institutionalized embeddedness. Macron's plan does not establish a similar mechanism. France will not implement a corresponding consultation process with its new partners and, more significantly, will not join NATO's Nuclear Planning Group.

The outcome is a dual-track deterrence framework in Europe in which neither is superior to the other. Some of France's nine partners, such as Germany, Belgium and the Netherlands, already host US nuclear weapons under NATO's existing sharing arrangements and are members of the Nuclear Planning Group. They are now enrolled in a French deterrence framework that takes place outside those structures, and there is no shared protocol for the interaction of both (NATO and

French Extended Deterrence) during a crisis. This makes adversary calculations more difficult and requires new coordination venues for allies other than NATO's nuclear planning process – venues that are not yet established.

NATO Secretary General Mark Rutte has sought to solve this puzzle, welcomed the French plan and stressed that the ultimate and supreme protector of European security is still the United States' nuclear umbrella. This is politically comforting, but it doesn't make any sense strategically. What does France's "forward deterrence" bring to the table if the US umbrella is ultimate? If it adds some substance, then there's no more ultimate US umbrella. Rutte can't have it both ways, and neither can Europe.

The Credibility Question France Cannot Answer

Extended deterrence means that the adversary assumes that the guarantor would use nuclear weapons on the partner's behalf. The United States spent decades, and enormous political capital, building that credibility through treaty commitments, forward deployments, dual-key arrangements, and institutionalised consultation. France is trying to speed up that process by being deliberately vague, hoping Russia will not bluff.

Nonetheless, there's a catch to the ambiguity. The French nuclear arsenal is too weak and ineffective to provide significant damage limitation in the event of a nuclear war. France can only retaliate on behalf of its allies and cannot act preemptively, unlike the United States. The assurances of a French "retaliation" against a distant country like Norway (bordering Russia) or Poland (on NATO's eastern flank) require a response to the question de Gaulle was forced to ask Kennedy in 1961: if the US would be willing to "trade New York for Paris" in the event of a Soviet nuclear attack on Western Europe. Macron hasn't been more ambiguous than Kennedy.

The Arms Control Damage

Macron's plan faces strategic risks beyond Europe's borders. They arrive in an already crisis-stricken arms control environment. On February 5, New START lapsed without a replacement, marking the first time since 1972 that the US and Russia do not have legally binding limits on their strategic nuclear arsenal. The treaty, widely viewed as the foundation of nuclear non-proliferation, is in a state of crisis – the three previous NPT Review Conferences have not resulted in a consensus document.

France has thrown a number of destabilising factors into this void at the same time. Macron announced an increase in France's nuclear warhead stockpile and, in a significant departure from past doctrine, France will no longer publish the number of nuclear weapons it possesses – a move toward opacity at precisely the moment when transparency is most needed. This opacity is consistent with the trend of fewer disclosures by the US and Russia as New START has expired. More fundamentally, France's initiative establishes a precedent without a framework of governance. The five recognised nuclear weapon states are allowed to keep nuclear weapons under the NPT. It does not explicitly state anything about new extended deterrence architectures built outside the framework of the Cold War-era grandfathered architectures. Germany's close engagement with different aspects of French nuclear deterrence will create a dangerous precedent: other nuclear-weapon states may follow France's example and provide their regional partners with nuclear 'umbrellas,' which would further erode the goals of the NPT. If this is normalised without challenge, it's not too far-fetched to imagine India signaling nuclear protection to friendly nations in its neighbourhood.

The Political Fragility

One aspect of strategic analyses that is often overlooked is that of relying on one political figure in the country with elections coming up in 2027. Within a year, France may elect its first right-wing president from the National Rally party, which would have no hesitation in backpedaling from Macron's modest advances. An extended deterrence guarantee that can be revoked by an electoral victory is not a deterrence guarantee – it is a political gesture covered in the language of strategy. Europe's security deserves better than that. The continent faces security threat, a genuinely unreliable American patron, and a genuine capability gap in nuclear deterrence. Macron's initiative is a serious attempt to address all three. But seriousness of intent does not substitute for clarity of commitment. Nine countries have taken shelter under an umbrella whose terms are undefined, whose institutional foundations are absent, and whose political durability extends only as far as the next French election cycle.

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Op-ed | India's Expanding SSBN Force and What It Means for Pakistan

Abdul Moiz Khan

The Indian nuclear-powered ballistic missile submarine (SSBN) program has come a long way since the commissioning of INS Arihant in 2016. This brings a few key questions into the spotlight: Will India pursue a continuous at-sea deterrence (CASD) or follow the Russian-originated Bastion strategy? Besides, who will maintain control over these submarines: the Indian Navy or the Strategic Force Command (SFC) & how does this affect the deterrence equation vis-à-vis Pakistan? Currently, India has three operational SSBNs: INS Arihant, Arighat, and Ardhiman, with the fourth, INS Arisudan, set to join the fleet in 2027. After completing four Arihant-class boats, India would move on to the next phase of its SSBN program, building the S5-class submarines. However, these developments raise an important question: which strategy would India adopt for its SSBN force in the immediate future?

The bastion concept, pioneered by the Soviet Navy, advocates deploying the SSBN fleet within a heavily defended maritime zone near one's shores rather than dispersing SSBNs widely across the open ocean. The maritime zone is protected by surface and sub-surface vessels, and both fixed and rotary ASW platforms, making it extremely challenging for the adversary to sink them. On the other hand, the CASD posture, historically associated with the United States (US), the United Kingdom, and France, requires maintaining at least one fully armed SSBN on deterrent patrol round the clock. To ensure that, a country requires a fleet of at least three SSBNs to pursue a CASD posture; one on patrol and the remaining two in transit or maintenance.

It was widely assumed that India would adopt the Bastion strategy and keep its SSBN fleet in the Bay of Bengal, closer to its shores. This was based on four key premises: it allowed the Indian Navy to safeguard its SSBN fleet from adversaries' anti-submarine warfare (ASW) platforms. Secondly, less than a decade ago, India had only INS Arihant, which was more of a technological demonstrator than an active deterrent platform, rendering it highly unlikely that the sub carried nuclear payloads during peacetime. Thirdly, the Indian Navy did not have a submarine docking facility for replenishment purposes (food/medical evacuation) other than its naval bases along the Indian shoreline.

However, developments over the last few years indicate that New Delhi has already decided to operationalize the CASD posture. This is evident from several tangible aspects. To begin with,

India will have four operational SSBNs by the end of 2027, allowing New Delhi to deploy at least one submarine at sea 365 days a year. With four operational SSBNs, India can maintain a realistic patrol rotation: one boat on active deterrence patrol, one in transit or worked up for patrol, one in maintenance and refit, and one undergoing training cycles or weapons qualification.

India now has an additional facility, an operational jetty at Agalega Island in the Western Indian Ocean, which can be used to replenish SSBNs but not to load SLBMs. This will provide an additional haven for SSBNs because the adversary cannot focus solely on the Bay of Bengal to hunt Indian SSBNs. Also, the latest report released by the Stockholm Institute of Peace and Research Institute (SIPRI) has revealed that India has deployed a limited number of nuclear warheads onboard its SSBNs. This indicates that New Delhi already has one SSBN on constant patrol, equipped with nuclear-tipped SLBMs, thereby confirming the adoption of the CASD posture.

Deploying SSBNs with nuclear weapons onboard is not significant, but a key aspect pertains to their operational control. The Navy and the SFC both retain control of the SSBN fleet within their respective domains. As far as day-to-day operations, crew selection, and maintenance are concerned, the command remains with the Navy. However, when it comes to the custody of nuclear warheads, their mating with SLBMs, loading and offloading, command of the submarine during deterrent patrol, and, finally, the authorization to launch the nuclear payload will remain with the SFC, which operates under the aegis of the Nuclear Command Authority (NCA).

India's evolving SSBN posture confirms the deployment of nuclear warheads on SSBNs. This should not come as a surprise because its land-based missiles, such as Agni-P, are already encapsulated in a canister, integrating both the warhead mated and the delivery system. According to SIPRI, only 12 warheads are deployed, indicating that SLBMs from only one SSBN are mated with nuclear warheads. However, soon, remaining submarines will be equipped with nuclear warheads as well. Moreover, signaling from the Indian side confirms the enhanced role of maritime assets in future operations, both conventional and nuclear.

For Pakistan, the expanding fleet of India's SSBNs and the deployment of nuclear warheads on them mark the beginning of a new but distinct challenging phase, in which New Delhi will have an edge over Islamabad because the former does not possess an operational SSBN and has not yet initiated construction of one. Moreover, Indian advancement in the SSBN domain cannot be seen

in isolation. It should be analyzed as part of India's broader nuclear strategy not only to attain the capability to launch swift strikes from both land and sea but also to absorb the opponent's retaliation. India's Mission Sudarshan Chakra, an ambitious effort to intercept incoming airborne projectiles, is part of that effort.

As India's second-strike capability is increasing with the expanding fleet of Arihant-class SSBNs along with the deployment of nuclear weapons on them, Pakistan has to pursue the development and deployment of its own SSBN force. This will remain under the strict cardinal principles of Pakistan's Full Spectrum Deterrence response, which is grounded in the notion of Credible Minimum Deterrence. Besides, Pakistan has to accelerate the hardening of its land-based nuclear facilities and pursue a dispersal strategy. In the meantime, Islamabad should continue to invest in augmenting its Intelligence, Surveillance, and Reconnaissance capabilities by launching additional satellites into orbit to monitor Indian strategic assets. This is extremely important because battlefield transparency will be a key deterrent force multiplier in future conflicts. These measures are important because India's belligerence has increased in the last few years, as evident from the actions taken by the Indian side in 2019 and 2025 respectively, when it launched unprovoked military strikes against Pakistan. Keeping this in view and the Indian growing aspirations to have an impenetrable missile defense along with an operational sea-based nuclear force, a possibility exists that New Delhi may resort to launch first strike in a crisis situation. Therefore, it is imperative for Pakistan to take appropriate measures as mentioned above to not only reduce India's first strike contemplations but to maintain Mutually Assured Destruction in the region.

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Op-ed | India's Operationalization of IBGs: Implications for Pakistan

Abdul Moiz Khan

The Indian Army has announced the operationalization of first-batch of long-overdue Integrated Battle Groups (IBGs), the idea for which was first conceived in 2004, under the aegis of the limited-war doctrine known as the Cold Start Doctrine. This development requires deliberation on the following facets: Who will lead them? Why is the Indian Army again tilting towards establishing IBGs when the more agile Rudra brigade concept was already introduced last year? Will IBGs replace Rudra brigades? When will they be deployed? What would be their composition? The article will also examine the security implications for Pakistan because, since the inception of IBGs, they have been framed as formations to launch offensive operations against Pakistan under the nuclear overhang.

The IBGs debate has once again attracted attention as key Indian media outlets have hinted regarding their establishment and operationalization. The idea of an IBG was copied from the Soviet “Operational Maneuver Group” (OMG), which was tasked with piercing through the adversary’s well-guarded defenses. Indian army began to consider adapting to a new, small, and mobile combined arms force after the swift mobilization of its bulky strike corps failed during Operation Parakaram in 2001-02. The composition of an IBG will depend on the terrain where it is deployed. However, their numbers are expected to remain between 5,000 and 6,000.

As far as command of the IBG is concerned, conflicting reports are circulating in the Indian media. As its size is nearly equal to two brigades, it is expected that a Major General will have operational control of an IBG, with a Brigadier-rank officer possibly serving as the chief operations officer. The rationale behind the appointment of a Major General is to reduce operational and, especially, bureaucratic red-tapism, thus allowing the IBG commander to act independently and in coordination with the higher chain of command in real time.

The Indian Army is expected to roll out four IBGs along with a fire support group (FSG) in the initial phase, with the first IBG to be carved out of the Panagarh-based Mountain Strike Corps XVII, based in West Bengal. The remaining three are likely to be established in the coming months. FSG would play an important role as they will operationalize towed/self-propelled rocket artillery assets and long-range loitering munitions to provide additional fire support to advancing IBGs.

An important question is why the Indian Army decided to establish IBGs when a similar yet agile formation, such as the Rudra Brigade, was already operational. This decision was undertaken because the Indian Army identified inherent structural issues after test-bedding and operationalizing at least two Rudra brigades. For instance, the sanctioned strength of 3,000 personnel was too small because operations in the deserts of Rajasthan and plains of Punjab, require mechanized formations to conduct rapid assaults. Dislodging the adversary from their entrenched, fortified positions requires a sizeable mechanized force, along with other arms, to overwhelm the defending forces.

As mechanized formations are involved, this requires additional petroleum, Oil, and lubricants (POL) stocks, as well as swift replenishment of ammunition and specialized equipment, to clear mine fields before the commencement of military operations. All this exercise demands the sanctioning of additional troops, although not participating directly in fighting, but acting as a supporting arm. Therefore, to rectify the earlier mistake, the Indian Army once again adopted IBGs because they provide the desired force to act decisively.

The arrival of IBGs on the horizon did not imply that Rudra brigades would be disbanded; rather, they are likely to exist but with a different role. They can be used as rapid-response units to assist the Indian Army troops deployed along the border, who can be subjected to counter-attacks from the adversary. The rationale is simple because Rudra Brigade is an all-inclusive mobile force, which can be sent as a quick response unit in a shorter duration to not only repulse the adversary attack but, with a limited offensive capability, to prepare ground for a counterattack to be exploited by the incoming IBGs or other strike formations from the Indian Army's strike corps.

One key question is when the Indian Army will deploy the IBG. Given the history of IBGs' conception, they are expected to be deployed when tensions between India and Pakistan reach an all-time high. This will likely be the case because, given India's actions in 2019 and 2025, it is expected that, to achieve operational advantage, India's political and defense leadership may authorize the launch of IBGs to conduct pre-emptive operations. They are expected to make a shallow penetration inside Pakistan's territory because they were conceived and designed to conduct offensive operations against Pakistan on moments' notice. However, this does not mean that they can never be used against China.

The threat matrix for Pakistan has increased once again because New Delhi has hinted that it has decided to keep its options open and not restrict its response to merely using non-contact warfare assets such as fighter jets, stand-off weapons, and drones. India wanted to keep its option open to launch a ground offensive as New Delhi assumes that this will divert Islamabad's focus and resources during a crisis, which the former can exploit. In addition, this will divert resources during peacetime to prepare a response, conduct in-field exercises, strengthen defensive positions, and induct new weapons to thwart a possible ground invasion.

The rolling out of 1st IBG is just the beginning. In the near future, more will become operational, as evidenced by the Indian Army's current approach, which focuses on creating rapid-response fighting formations capable of operating independently. Pakistan would be closely monitoring these developments, as they can be employed in any future conflict against it. The ultimate goal of establishing IBGs is to retain an operational edge over Pakistan by maintaining an all-time combat-ready capability to conduct swift strikes under the nuclear overhang. This is likely to have an adverse effect on the existing conventional deterrence between India and Pakistan and could act as a catalyst into triggering a situation that went beyond the control of New Delhi, thus spiraling into an all-out nuclear conflict. The recent crisis has manifested that India is looking at different options to expand operational conventional space vis-à-vis Pakistan. Besides non-contact warfare, IBGs would provide India with a viable military option that can be deployed as a next step in future crisis between the two states.

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Op-ed | US-Saudi Civil Nuclear Agreement and India Exception:

A Comparative Review

Brig (R) Dr Zahir Kazmi

What Happened?

On 22 July 2026, U.S. Energy Secretary Chris Wright and Saudi Energy Minister Prince Abdulaziz bin Salman signed a 30-year civil nuclear cooperation agreement under Section 123 of the U.S. Atomic Energy Act, following President Donald Trump's reported approval the previous day. The agreement, accompanied by a bilateral safeguards' arrangement, now awaits congressional review before entering into force. The agreement provides the legal basis for broad U.S.-Saudi cooperation in the peaceful use of nuclear energy. It also strengthens the position of American companies competing for Saudi Arabia's planned nuclear power program while limiting the space available to other suppliers who compete with the U.S.

On 23 July 2026, President Trump publicly stated on Truth Social that the civil nuclear deal involves "no enrichment of material" and pertains only to non-military use. He further stated that its approval is "totally subject to Saudi Arabia joining the very respected and successful Abraham Accords," adding that the United States is "not opposed to Civil (Non-Enriched) Nuclear Facilities." This statement introduces a significant qualification, and an apparent contradiction, because earlier reporting on the signed agreement indicated that it permits uranium enrichment and reprocessing and does not require adoption of the IAEA Additional Protocol. Until the agreement and accompanying safeguards text are made public, it remains unclear whether the President's statement reflects the operative legal terms, a condition for implementation, or a subsequent policy direction.

The arrangement is reported to rely on Saudi Arabia's existing IAEA Comprehensive Safeguards Agreement, additional bilateral verification measures, and the legal conditions contained in Section 123 of the U.S. Atomic Energy Act. The precise scope of these measures, including the treatment of enrichment and reprocessing, will become clearer once the relevant texts are publicly available.

How Does the Agreement Address Proliferation Concerns?

If incorporated into the operative agreement, President Trump's no-enrichment condition would remove the principal dual-use pathway associated with uranium enrichment. Saudi Arabia would remain an NPT non-nuclear-weapon state subject to its IAEA Comprehensive Safeguards

Agreement, bilateral verification measures, and the statutory non-proliferation requirements of U.S. nuclear cooperation law. However, the assessment must remain provisional because earlier accounts of the signed arrangement reported a legal pathway for enrichment and reprocessing and no requirement for Saudi Arabia to adopt the IAEA Additional Protocol. The President's statement addresses enrichment but does not separately clarify reprocessing or the status of enhanced IAEA verification. Even with these unresolved questions, Saudi Arabia remains within the NPT and international safeguards system. The arrangement therefore does not create an India-type exemption from the non-proliferation framework.

Why Has Washington Accepted This Arrangement?

The agreement reflects strategic, commercial and geopolitical considerations. It creates a major commercial opportunity for the U.S. nuclear industry, strengthens the long-term U.S.-Saudi strategic partnership, and seeks to keep Saudi Arabia's future nuclear program within an American technological ecosystem.

President Trump's 23 July statement has also publicly re-attached the agreement to Saudi Arabia joining the Abraham Accords. This contrasts with earlier indications that civil nuclear cooperation had been separated from Saudi normalization with Israel. The administration appears to have judged that a closely controlled civil nuclear program under U.S. partnership is preferable to Saudi Arabia pursuing comparable capabilities through less restrictive suppliers. The exact nature of those controls, however, will depend on how the President's stated conditions are reflected in the operative agreement.

Comparison with the US-India Nuclear Agreement

The Saudi arrangement and the U.S.-India civil nuclear agreement fall into fundamentally different legal and strategic categories. As an NPT non-nuclear-weapon state, Saudi Arabia's civil nuclear program continues to operate under international safeguards. The agreement neither exempts Saudi Arabia from the core non-proliferation framework nor legitimizes an unsafeguarded military nuclear program. If the President's no-enrichment condition becomes operative, the distinction will be even clearer.

The U.S.-India agreement, by contrast, granted India exceptional access to international civil nuclear cooperation despite its remaining outside the NPT and retaining an unsafeguarded nuclear-weapons program. In effect, it accommodated India outside the established non-proliferation

framework rather than bringing it within that framework. The 2005-2008 U.S.-India civil nuclear agreement remains the single most consequential departure from established non-proliferation practice since the creation of the Nuclear Suppliers Group (NSG). India, a non-NPT nuclear-armed state that had already tested nuclear weapons in 1974 and resumed testing in 1998, received an exceptional NSG waiver and a Section 123 Agreement after negotiating a civil-military separation plan largely on its own terms.

Only the facilities voluntarily declared civilian by India were placed under India-specific IAEA safeguards (INFCIRC/754). Eight power reactors, the Fast Breeder Test Reactor (FBTR), the Prototype Fast Breeder Reactor (PFBR), key enrichment and reprocessing facilities, and much of India's nuclear fuel cycle remained permanently outside international safeguards. India also retained discretion over whether future indigenous breeder reactors would be designated as civilian under its separation plan.

The consequences continue to unfold. Imported uranium now fuels India's safeguarded civilian reactors, allowing more indigenous uranium to support its unsafeguarded strategic program. This has enabled the growth of the world's largest and fastest-growing unsafeguarded nuclear infrastructure, including indigenous PHWRs, fast breeder reactors, research reactors and associated reprocessing facilities outside comprehensive IAEA verification.

The 2008 arrangement did more than expand India's access to international nuclear commerce. By easing its uranium shortage, imported fuel increased flexibility in allocating indigenous uranium between safeguarded civilian reactors and the unsafeguarded strategic program. From a non-proliferation perspective, this indirectly enabled continued vertical expansion without breaching the agreement's formal terms.

The 500 MWe PFBR at Kalpakkam reached criticality on 6 April 2026, further illustrating this trend. Under India's separation plan, the PFBR remains outside IAEA safeguards, despite its capacity to produce additional plutonium through breeding blankets. Its commissioning is expected to significantly increase India's annual weapons-grade plutonium production capacity, with additional planned breeder reactors expanding it further. This is a continuing consequence of the 2008 exceptional arrangement.

The India Exception

The India-specific arrangement was presented internationally as bringing India “closer to the non-proliferation mainstream.” It instead legitimized selective exceptionalism and catalyzed vertical proliferation. A non-NPT nuclear-armed state received access to global nuclear commerce while retaining a substantial unsafeguarded nuclear-weapons complex outside comprehensive IAEA safeguards. Geopolitical considerations thus prevailed over “universal” non-proliferation principles.

Claims that the India agreement strengthened the non-proliferation regime are difficult to reconcile with its practical effects. The regime accepted facility-specific rather than comprehensive safeguards, permitted nuclear commerce without NPT membership, and established that strategic partnerships could override established norms. In effect, all states remained equal, but some became more equal than others.

Criteria-Based Approach and Pakistan

When Pakistan later sought comparable civil nuclear cooperation, several Western analysts advanced a “criteria-based approach” rather than treatment comparable to India. They argued that any future cooperation should depend on additional non-proliferation commitments, export-control performance and “responsible” nuclear behavior. This reflected inconsistent standards. India’s exceptional accommodation became the starting point for imposing additional conditions on Pakistan, rather than a precedent applied equally. The debate thus shifted from universal rules to country-specific strategic judgments.

Conclusion

The U.S.-Saudi agreement is best understood as a strategic and commercially driven adjustment within the existing non-proliferation framework, although its precise fuel-cycle terms remain publicly unsettled. Saudi Arabia remains an NPT non-nuclear-weapon state and its civil program remains under international safeguards. President Trump has stated that there will be no enrichment and that the deal is conditional on Saudi Arabia joining the Abraham Accords, but the legal effect of these conditions will remain uncertain until the agreement and accompanying safeguards text are made public.

The U.S.-India agreement was fundamentally different. It gave a non-NPT nuclear-armed state access to global nuclear commerce while allowing major parts of its nuclear infrastructure and

weapons-related production capacity to remain outside comprehensive safeguards. This has exacerbated South Asian strategic instability and contributed to the sustained strategic asymmetry that continues to shape the region.

The Saudi arrangement operates within the existing system. The India agreement created a major exception to it. That exception reinforced perceptions of discrimination, facilitated India's continued vertical expansion, and widened strategic asymmetry in South Asia, with lasting implications for regional stability and the credibility of the global non-proliferation regime.

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Op-ed | India's Nuclear Modernization and Strategic Stability of South Asia

Malik Kashif

The Stockholm International Peace Research Institute (SIPRI) Yearbook 2026 marks more than an update of global military expenditures, armament and procurement. Along with other countries' nuclear modernization, this year book highlights a significant shift in India's nuclear trajectory. According to SIPRI, India's nuclear weapons have grown from around 180 in January 2025 to approximately 190 in January 2026. India is pursuing the capability to deploy multiple warheads on ballistic missiles, while more warheads are in production for additional missiles. The Yearbook 2026 also mentions that, for the first time, India has deployed approximately 12 nuclear warheads during peacetime. This peacetime deployment argument is supported by the fact that India has canisterized nuclear tipped missile and is practicing sea-based deterrence patrolling. India is also on the list of countries, as per SIPRI Yearbook, that have deployed nuclear capable Hypersonic Cruise Missile (HCM) or Hypersonic Glide Vehicles (HGV). Along with the already three patrolling nuclear-powered ballistic missile submarines (SSBNs), the fourth SSBN, having nuclear tipped missiles, will also enter into service in 2027. Besides this, there are several other nuclear modernizations taking place in the related domains. Therefore, all these developments are certainly going to have serious implications for South Asia's strategic stability.

New Delhi's first dimension of nuclear expansionism is its sustainable vertical proliferation. With a substantial rise of 280%, India's arsenal has increased from around 50 warheads in 2008 to around 190 warheads in 2026. This increasing stockpile is supported by the expansion of fissile material production. This exponential increase in fissile material stockpile is enabled by a special Nuclear Suppliers Group (NSG) waiver in 2008. According to the International Panel on Fissile Materials (IPFM), New Delhi possessed an estimated 6.1 ± 2.4 tonnes of Highly Enriched Uranium (HEU), 0.73 ± 0.17 tonnes of Weapon-Graded Plutonium, and approximately 11 ± 6 tonnes of separate reactor grade plutonium. Moreover, the expected contribution of 500-MWe Prototype Fast Breeder Reactor (PFBR), at Kalpakkam, Tamil Nadu, will significantly boost India's plutonium production capability. It serves the purpose of a sustainable option for qualitative modernization and quantitative expansion of India's nuclear forces.

In addition to its quantitative expansion, India is also investing in expanding its delivery systems. In March 2024, India announced the successful test launch of Agni-V, an intercontinental ballistic missile (ICBM), a road-mobile canisterized missile with a range of about 5000-8000 km, equipped

with Multiple Independently Targetable Re-entry Vehicle (MIRV) technology. India is also one of the countries that has a dual-capable Hypersonic Cruise Missile (HCM). Simultaneously, New Delhi is expanding the sea-based leg of its triad. According to SIPRI Yearbook 2026, right now India is operating three SSBNs, including INS Arihant, INS Arighaat and INS Aridhaman. Whereas the fourth, INS Arisudan will be operational in 2027. From its SSBNs, India can fire nuclear tipped K-4 and K-15 missiles and these missiles are under continuous upgradation. Moreover, India is also developing a next class SSBN, known as S5. The report has also predicted that at the end of the SSBN program, India would operate around eight SSBNs.

This quantitative and qualitative expansion is reshaping the dynamic of crisis stability in South Asia. Historically, India's "recessed deterrent" posture, where warheads were kept separate from delivery platforms, provided the operational foundation for its declared No First Use (NFU) policy by ensuring deliberate rather than rapid nuclear employment. Now, the induction of solid-fueled, canisterized missile systems, including Agni-P and Agni-V, allows missiles to remain in a high state of readiness, potentially with pre-mated warheads, which reduces launch preparation time from hours to minutes. This trend is reinforced by SIPRI's assessment that India has placed a limited number of its arsenal into an operationally deployed state at sea, signaling a shift towards a more readiness posture. This development further compresses decision making time during a crisis and increases the risk of conventional escalation. In such an environment, the deployment of a canisterized missile during a high intensity conflict may intensify the 'use it or lose it' dilemma, increasing the risk of miscalculation, and leading towards inadvertent escalation.

Beyond its implications for the crisis stability, India's expanding nuclear capabilities are also eroding the arms race stability in South Asia. Arms race stability concerns whether states perceive their existing capabilities as sufficient for maintaining deterrence, thereby reducing the incentive for continuous force expansion. However, New Delhi's ongoing quantitative and qualitative modernization raises concerns for arms race stability. A 36% increase in its nuclear stockpile during the last decade, the expansion of its Highly Enriched Uranium (HEU), weapon grade plutonium production base and expected contribution of the Kalpakkam PFBR collectively indicate the trajectory of force modernization beyond India's security needs.

Although India portrays its nuclear modernization as a response to the challenges posed by China and Pakistan, in reality, it is a reflection of its hegemonic aspirations that fuels modernization. The SIPRI assessment represents more than an annual accounting of New Delhi's nuclear arsenal; it

signals a structural transformation of the strategic landscape of South Asia. New Delhi's nuclear modernization is not just for the purpose of having more warheads. It represents a major transition characterized by evolving operational practices, quantitative increase, qualitative modernization, technological integration, and a transition from a recessed deterrent to the operational readiness posture. These developments mark a shift from restraint to readiness and preemption, making strategic stability more fragile. Collectively, these developments are changing the dynamics of strategic stability in South Asia by compressing decision-making time and raising the prospect of escalation between two nuclear-armed neighbours who have seen a series of military crises over the last ten years. The importance lies not merely in the increase from 180 to 190 warheads, but in the combination of sustained modernization, expanding fissile material production, and the transition to an operational readiness posture. These developments reinforce an action-reaction cycle, intensify arms race in South Asia, and incentivize the 'use it or lose it' dilemma, while undermining the crisis and strategic stability in the region.

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Op-ed | Article XI and Export Controls: Bridging the Divide Between Scientific Cooperation and Chemical Security

Shahwana Binte Sohail

The field of chemical research is undergoing a transformation that outpaces the international governance frameworks. The rapid development of AI, digital chemistry and automated laboratory systems are also affecting chemical research. This technological scene has raised a new debate among States Parties to the Chemical Weapons Convention (CWC). The challenge is how to proceed with the export of sensitive chemicals and technologies without compromising Article XI's promise of peaceful scientific cooperation. Many of the technologies are "dual-use" – that is, they can be used in lawful scientific and industrial research but also for unlawful purposes. Though there is no dichotomy between scientific cooperation and chemical security, a challenge to make sure that both complements, not compromise, each other exists.

The underlying principle of the Chemical Weapons Convention expressed in Article XI is that disarmament should not be achieved at the expense of development. This Convention is not only intended to eradicate chemical weapons but also to allow all States Parties to enjoy the benefits of the peaceful application of chemistry. Access to scientific knowledge, technology, equipment and capacity building continues to be very important for economic growth, health care, agriculture and sustainable development. This is more relevant than ever today, when developing countries want to be more active in scientific innovation and the need to enhance national chemical safety and security.

Meanwhile, there have been huge advances in science that make chemical governance even more difficult. Many chemicals, technologies and research tools have legitimate civilian applications but can also be misused. Emerging technologies such as artificial intelligence and automated laboratory systems have increased these risks through advanced chemical technology. For example, AI-assisted molecular design can rapidly identify new chemical compounds for pharmaceutical research, but the same capability could also be exploited to generate toxic compounds if used irresponsibly. Export controls thus play an important role in this context to minimise proliferation risks and ensure the safe transfer of sensitive materials and technologies.

The question isn't so much whether export controls exist, as how they work. They continue to be a key element of the international non-proliferation regime. The bigger challenge is that they are

implemented fairly, transparently and predictably. There have been calls for a more complete application of Article XI in many developing countries, and other countries have stressed the importance of continuing to have effective control over sensitive chemicals and technology. There is no conflict between these positions. Both are essential in creating a credible chemical security framework. Trust is fostered through peaceful scientific cooperation and development, and responsibility in export controls limits proliferation. The Convention is designed to achieve both objectives.

The way forward is not to find a middle ground between one framework and the other. Instead, Article XI and export controls should be considered complementary aspects of the CWC. Article XI encourages cooperation in the peaceful use of science and technology, exchange of technology and capacity building and export control is used to reduce the risk of diversion or transfer of sensitive materials and technology for prohibited purposes. They combine to strengthen international security, and to advance science. In an era of new technologies like artificial intelligence, digital chemistry and automated laboratory systems, which are changing the face of chemical industry, this equilibrium is becoming more and more critical. These innovations can have a positive impact on accelerating scientific discovery but also can raise concerns for dual-use applications. The aim is not to block innovation but to make sure that it is done in a secure and responsible international environment.

Achieving this balance will require good international cooperation, and the Organisation for the Prohibition of Chemical Weapons (OPCW) is well placed to help. The OPCW must remain a verification body and must also continue its adaptation to the scientific and technological evolution. Capacity building, scientific interaction, education and discussion regarding new technologies can be effective ways to assist States Parties to strengthen chemical security and peaceful scientific cooperation. More importantly, it may serve as a platform for building trust and finding common ground regarding the implementation of Article XI and responsible export controls. The role of governments is also pivotal in realizing this balance. Export controls should be clear, predictable and risk-based, not restrictive in scope. There should be unlimited access to sensitive materials for legitimate scientific research, academic institutions and industry with effective national control. This is a way to enhance confidence in and the international security of the Chemical Weapons Convention.

Trust is also necessary among States Parties for a balanced implementation. The major issues about Article XI tend to be related to fairness, access to peaceful scientific cooperation and uniform application of export controls. This can be addressed through ongoing consultation and engagement, technical support, scientific capacity development and by good faith implementation of the Convention. However, more than cooperation between governments is needed to build trust. Students, industry and universities are important in the dissemination of good research practices.

By working hands-on, their efforts can impact policies to stop abuse without interfering with legitimate scientific research. Awareness of the risks of ‘dual use’ and innovation can be promoted through good collaboration between governments, scientific institutions and industry. The success of the Chemical Weapons Convention (CWC) in the future will be largely determined by how flexible it can be in the face of fast modern scientific and technological advances. States Parties should not see Article XI (the promotion of the peaceful use of chemicals, technology, and scientific knowledge) as being against export controls, which aim to prevent the misuse of sensitive chemicals, and export controls as rivals, but rather as complementary pillars of the Convention.

A two-way approach can be used to enable scientific collaboration to take place on a legitimate basis and not lead to proliferation. The credibility and long-term effectiveness of the Convention would slowly be eroded if either of these pillars were impaired. States Parties should implement Article XI and export controls in an open, responsible, and non-discriminatory way, in a rapidly evolving chemical landscape where artificial intelligence, digital chemistry and automated laboratories play a major role. This will enhance global chemical security and maintain the good of chemistry for peaceful uses. Finally, the question of cooperation versus control is not one that can be settled completely by itself, but one that must be solved in conjunction with the development of the necessary cooperative mechanisms to solve the new technological problems.

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Op-ed | India's Baaz Battalion and Drone Warfare in South Asia

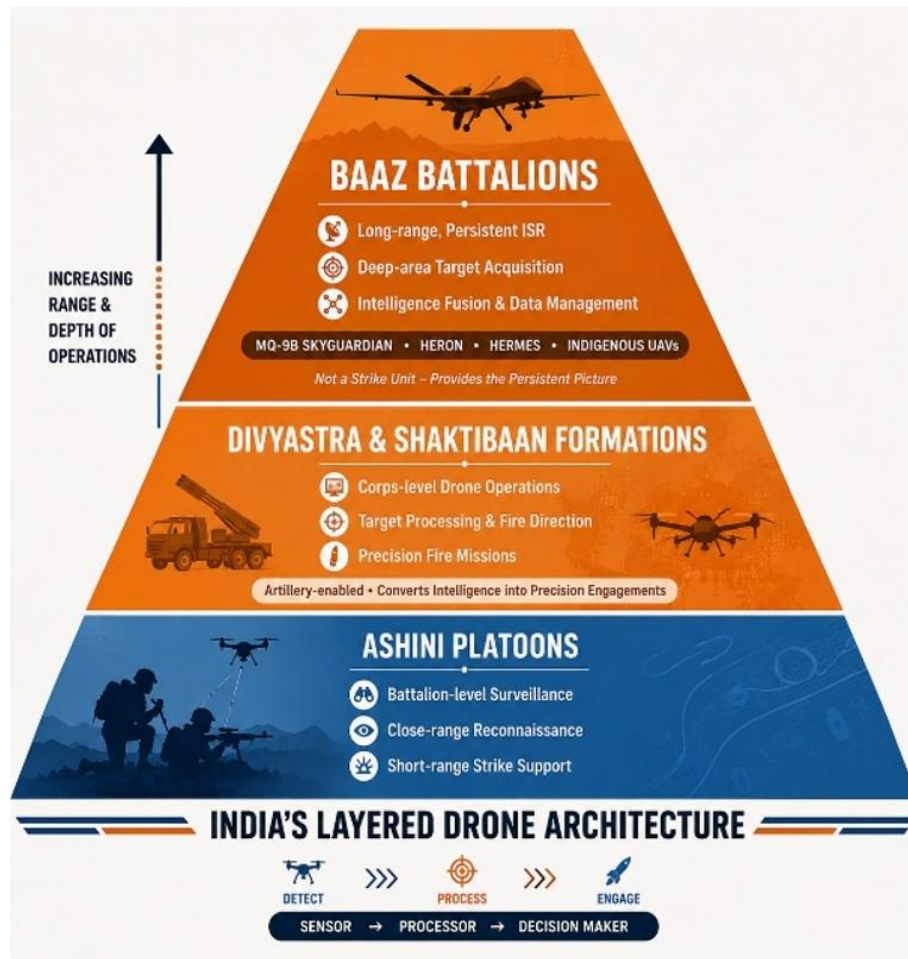
Syed Ali Abbas

On 29 June 2026, outgoing Indian Army Chief General Upendra Dwivedi announced the raising of specialised Baaz battalions under the Army Aviation Corps. Most of India's drone developments over the past two years have been about more units, more platforms, larger inventories. This new specialised battalion moves long-range unmanned ISR into a dedicated formation built to sustain persistent surveillance and compress the sensor-to-shooter cycle at the operational level. An announcement about it follows the Army's April 2026 Technology Roadmap for unmanned systems, drafted in the aftermath of Pak-India May 2025 Conflict, where loitering munitions featured prominently in the opening exchanges of the conflict.

Indian post-May 2025 Conflict response has extended well beyond the Army. New Delhi allocated \$234 million to a Drone Incentive Program covering platforms, components, and counter-drone technology, and cut GST on drone production from 18 percent to 5 percent to stabilise domestic manufacturing. The Border Security Force opened its own drone warfare school in June 2025, separate from the Army's plan to establish nineteen drone training centres by early 2026. Baaz is one part of this wider institutional response to make drone warfare a standing feature of Indian force structure across services.

Understanding What is Baaz

Baaz battalions are specialised Army Aviation Corps UAVs formations built for long-range, sustained intelligence, surveillance, and reconnaissance, along with deep-area target acquisition. The formation will occupy a specific slot in a layered drone architecture the Indian Army has been assembling since 2024. At the tactical base sit the Ashini platoons, small teams attached to infantry battalions for close-range surveillance and short-range strike.



Above them sit the Divyastra and Shaktibaan formations under the Regiment of Artillery, which convert drone-derived data into fire missions at operational level. Baaz will sit above both, tasked with sustained ISR over depth areas, target acquisition, and managing the intelligence flow from a large and technologically mixed fleet. It is not conceived as a strike unit in the way Divyastra is. Its role will be to hold a persistent picture of the battlefield and route it to whoever needs to act on it.

The equipment reflects that intended role. Baaz units are set to fly the MQ-9B SkyGuardian, procured from General Atomics under the 2024 government-to-government deal worth roughly four billion dollars, alongside the Israeli Heron and Hermes families that have carried India's long-range ISR for years, plus a growing share of indigenous platforms. Three different platform lineages, three different maintenance and software chains, will now sit under one formation responsible for making them work as a single system.

Where Integration Still Lags

Jointness has not kept pace with this expansion. The then India's Chief of Defence Staff, General Anil Chauhan, noted in March 2025 that the armed forces had yet to settle on a common vocabulary for classifying unmanned and counter-unmanned systems, and called for a unified tri-service framework that remains unpublished. Assessments of India's drone modernisation have drawn a similar conclusion, observing that fragmented command arrangements continue to constrain the interoperable operations that network-centric warfare requires. The tri-service "Cold Start" drone exercise held in October 2025 appears to have been one step toward addressing this, testing drone and counter-drone coordination across services.

Baaz will be raised into a space whose platforms will need to share airspace with other institutions such as the Indian Air Force and civil aviation, and its long-endurance drones will depend on satellite bandwidth India has not yet fully built for this purpose. Moreover, this will be managed in real time, under contested conditions remains unseen. A more fundamental question is about technical aspect; the MQ-9B, the Heron and Hermes families, and India's indigenous platforms each generate sensor data in different formats, and combining that output into a single usable targeting picture depends on shared data standards that have not been demonstrated to exist. Settling which service controls the airspace is, in the end, a matter of negotiation. Getting three dissimilar sensor architectures to function as one in real time is an engineering task, and it is this second challenge, that suggests the Army's institutional thinking on drone employment may be advancing ahead of the joint architecture needed to make full use of it.

Implications for Pakistan

The operationalisation of these plans will have serious implications for Pakistan. It needs to plan around a dedicated operational-level ISR and targeting formation that shortens the detection-to-strike timeline along the border. A formation built to sustain persistent watch over depth areas and hand targets to artillery and strike aircraft faster will reduce the warning time available to mobile assets and forward-deployed units. This effect depends on how well Baaz's own mixed fleet fuses data internally and with other systems.

Pakistan's more useful response should be to deny the sensor layer on which Baaz depends. Electronic warfare, spoofing, and decoy measures aimed at medium-altitude, long-endurance drones degrade the entire targeting chain rather than a single node within it. Continued investment

in dispersal, hardening, and early warning for likely target sets also reduces the payoff India draws from persistent depth surveillance, even where detection itself cannot be prevented.

Three integration questions on the Indian side are important.

The Army and Air Force still need to settle shared control of contested airspace and space assets. Baaz's own mixed fleet still needs to fuse dissimilar sensor data fast enough to matter under jamming. And across the wider force, the Army, Air Force, Navy, and Border Security Force are each building their own drone architecture on separate tracks, without a common standard tying them together. Baaz doesn't break none of these gaps. But together, they suggest India's drone capability may take longer to function as one integrated system than the pace of announcements implies. However, Baaz confirms a trajectory that India is institutionalising drone-centric ISR and strike as a standing part of its force structure, across the Army, Air Force, Navy, and paramilitary forces at the same time. Whether India closes the inter-service and intra-fleet integration gaps in time to make Baaz function as intended remains an open question.

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Op-ed | Energy Security and Climate Change

Yasir Hussain

Entire European continent is witnessing a record-breaking heat wave, causing number of deaths. According to World Health Organization (WHO), Europe's heatwave has caused over 1,300 deaths and these deaths are directly linked with increasing temperature across the continent. WHO further stated that, Europe has become the fastest-warming continent on Earth, heating at twice the global average. The sudden temperature rise in the region—which is accelerating at a scary pace—has re-positioned nuclear energy as an important energy alternative. The 2015 Paris Agreement has identified nuclear power as an important energy source to meet global warming mitigation target. But the Europe is not the only region suffering from global temperature rise. The latest estimates suggest that entire planet earth is accumulating heat at massive scale, worsening Earth's energy imbalance. This scenario leads us to an important question; Is the nuclear energy answer to the climate change?

The global efforts towards the net-zero emissions have increased the need for reliable and environmentally friendly electricity. While renewable energy sources such as wind, solar and hydro will continue to play an important role, modern energy structure require a stable and reliable power sources that can function irrespective of weather conditions. Global energy transition towards climate-friendly alternative has accelerated recently due to the increasing demand for new energy generating capacity around the globe, both to switch from old fossil fuel plants, especially coal-power plants, which emit huge amount of CO₂. Global greenhouse gas (GHG) emissions are continuing to increase, mostly as a result of the excessive use of fossil fuels. As per latest estimates, fossil fuels, i.e., Oil, gas and coal, account for almost 80% of all energy consumption globally. It means, fossil fuel still meets almost four-fifths of the world's energy needs but also has a share of 60% of global GHG emission.

While Europe's climate crisis is a recent phenomenon, South Asia, one of the poorest regions, also faces tremendous challenges in terms of climate change. It is the most vulnerable regions to climate shocks. As per world bank reports, the region is experiencing a “new climate normal” in which intensifying floods, heat waves, and droughts have become more frequent. In South Asia, Pakistan's climate crisis is unique. Pakistan consistently remains atop among the countries most vulnerable to climate change, and many of its densely populated cities are considered to be the most polluted cities in the world. Interestingly, Pakistan contributes only 1% to the global GHG

emissions. World bank also estimates that Pakistan's climate related events such as environmental degradation, and air pollution, may cause Pakistan's GDP to shrink by 18-20% by 2050.

Since Pakistan's reliance on fossil fuels to meet, its energy demands further contributes to worsening climate crisis in the country, nuclear energy can play an important role in mitigating Pakistan's climate vulnerability. Pakistan shares a long history of cooperation with International Atomic Energy Agency (IAEA), in peaceful application of nuclear technology and nuclear energy is one of the areas where Pakistan has a symbiotic relationship with the nuclear watchdog. Since nuclear energy is the low-carbon, environmental-friendly energy source, Pakistan has long realized that investing in nuclear energy can ensure its energy security, reduce GHGs, and reduce its dependency on costly imported fossil fuels. According to PAEC, from 1970s to onwards, nuclear power plants have generated around 200 billion units' carbon free electricity, avoiding more than 122 million tons of CO₂ equivalent GHG emissions. This quantity of GHG emission is equal to burning around 51 million tons of coal. This signifies the crucial role of nuclear energy in the development of a sustainable and clean power generation in Pakistan.

In order to meet the future energy needs, Pakistan, under its "Pakistan in the 21st Century: Vision 2030", has outlined a promising energy security plan. This plan sets a target of 162,000 MW sustainable and environmental-friendly power generation by 2030. This vision demonstrates Pakistan's capability and commitment to harness the benefits of nuclear technology for peaceful purposes. The IAEA's recognition of Pakistan's peaceful nuclear program for its adherence to the global safety and security standards, technological advancement, and responsible use of nuclear technology validates its institutionalized command structure and its ambition to become a reliable international partner in peaceful nuclear application. Today, nuclear energy is becoming an essential component of global energy security landscape. In the wake of climate crisis, nuclear renaissance has become real.

Many countries from Europe to Asia, are expanding their nuclear power generation capacities. In 1954, Obninsk Nuclear Power Station in Russia (then USSR) was the first nuclear plant to connect with national grid. Humankind, for the first time witnessed, the peaceful application of nuclear technology after the bombing of Hiroshima and Nagasaki. Today, there are over 440 operational nuclear power plants across more than 30 countries. The salience of nuclear energy is increasing day by day. It is, therefore, the responsibility of developed world, particularly the Nuclear Suppliers Group (NSG) member states, to extend nuclear cooperation to the climate-hit countries like

Pakistan. Keeping contemporary climate-induced crisis in consideration, global nuclear order, which is based on decades old discriminatory practices, needs a revisit. Then, it will pave a way forward for countries like Pakistan to fight climate change with nuclear technology.

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Link: <https://www.thenews.pk/print/1429014-climate-change-and-a-new-nuclear-order>

Op-ed | Great Power Competition and the Global Race to Secure Critical Minerals

Dr Rahat Iqbal

Critical minerals are playing a key role in transforming the geoeconomics and geopolitics of the contemporary world. Owing to their unique characteristics, the critical minerals including cobalt, lithium, nickel, rare earth elements, copper, and platinum, are considered essential components of technological modernization in the 21st Century. These minerals are widely used across various sectors, including defence, electronics, telecommunications, energy, and aerospace. Due to their importance in technological advancement in both military and civilian domain, industrialized economies such as the United States (US) and China are making concerted efforts to maintain control over the critical minerals which are vital in processing advanced military and non-military technologies.

Amid intensifying new great-power competition, US President Donald Trump stated at the Pentagon that his “one big beautiful bill” had saved billions of dollars to secure critical minerals. These resources, he argued, would support technological advancement in the military domain, including precision-guided weaponry, advanced communications, and AI-driven autonomous warfare platforms. In this regard, the US Defense Logistics Agency (DLA) has signed contracts to stockpile large quantities of critical minerals, including those essential for clean and renewable energy technologies.

In contrast, China is considered the world’s leading producer of these critical minerals, with advanced processing and refining capabilities. Through long-term investments and trade opportunities, Beijing has secured access to mineral-rich regions such as Southeast Asia, Africa and Latin America. China produces approximately 70% of the world’s rare earth elements, manufactures about 93% of high-strength permanent magnets, and controls up to 95% of global processing and refining capacity. As a dominant stakeholder in the critical minerals supply chain, China has imposed restrictions on materials used for military purposes. Resultantly, foreign companies interested in imports of these critical minerals are now required to obtain special licenses.

Against this backdrop, and in an effort to ease tensions stemming from trade competition over critical minerals, US President Donald Trump and Chinese President Xi Jinping held a sideline

meeting during the International Asia Forum in October 2025. During the 90 minutes meeting, both leaders reached a consensus on temporarily easing trade pressures created by stringent policies on both sides. The US agreed to reduce certain tariffs on Chinese goods, while China committed to resuming the purchase of the US agricultural commodities and suspending the export restrictions on rare earth metals.

Although the meeting appeared to be beneficial for both countries, it failed to resolve deeper disagreements over technology and long-term competition. Dennis Wilder, a professor at Georgetown University who previously worked on China as well as for White House's National Security Council, stated in an interview with Al Jazeera that "the apparent results of this meeting will be a pause and a small rollback in the trade war,". Several analysts have similarly described the outcome as a trade truce, noting that the agreed deliverables have yet to be fully implemented.

China's Correspondent to Al Jazeera, Katrina Yu, during her reporting on the Trump–Xi meeting held in Busan, South Korea, stated that "rare earths are critical for the production of everything from smartphones to headphones to, of course, military defence weaponry, fighter jets and tanks,". She further stated that "this is a national security issue for Trump, and the problem for him is that China dominates this industry".

In this regard, the US is making efforts to develop an independent supply chain that does not require Chinese assistance. Seeking inspiration from industrial teaching and the principles of Alexander Hamilton, the founding father of America, the recent US national security strategy emphasized reducing dependence on foreign suppliers for strategically important materials and components. This approach advocates strengthening domestic production capabilities, securing resilient supply chains, and ensuring access to critical minerals necessary for national defense and economic prosperity. In the wake of these developments, several geopolitical fault lines have emerged along which great powers, primarily the US and China, are competing for access to critical mineral rich regions, particularly in South America and Africa.

To this end, President Trump is in search of opportunities to gain access to mineral-rich countries, including those in South America, as well as Greenland and Canada. While delivering a speech at the World Economic Forum in Davos, Switzerland, President Donald Trump stated that he was aiming for "immediate negotiations to acquire Greenland for national security reasons," while asserting that he would not use force. On the other hand, during the press briefing on June 26,

this year, Canadian Prime Minister Mark Carney stated that Canada is working hard to position itself as substitute to China in the supply of critical minerals. In the broader context, the European Union (EU) has adopted the Global Gateway Strategy, aimed at bolstering smart, clean, and secure links in energy, transport, communications, and digital sectors, as well as enhancing healthcare, education, and research mechanisms across the globe. Given the growing significance of the critical minerals for technological advancements, competition over these resources are likely to intensify. In the current geopolitical scenario, critical minerals can no longer be viewed merely as economic commodities, as they were in the past; rather, they have emerged as essential strategic assets.

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Op-ed | Pakistan's Cohesive Deterrence and the Architecture of South Asian Stability

Syed Ali Abbas

Fifteen months after the four-day war of May 2025, India is nearing implementation of a restructured military command built around a single organizing principle: integration. The Indian Chief of Defence Staff (CDS) has proposed three theatre commands, including a Western Theatre built explicitly around Pakistan and placed under Air Force leadership, with implementation expected to be completed soon. In June, the Defence Research and Development Organisation completed Phase 2 of India's ballistic missile defence (BMD) programme, a fourth S-400 regiment arrived from Russia, and five further regiments were cleared for procurement. Together, these efforts try to fuse offensive strike, unified command, and layered air defence into one system built to operate against Pakistan and China simultaneously. Pakistan's response to this consolidation is described as Cohesive Deterrence, a framework that gives shape to Pakistan's already mature deterrence posture.

The concept rests on a nested structure. At the strategic level, Full Spectrum Deterrence capability is held within the ambit of Credible Minimum Deterrence, so that the extension of coverage from the sub-conventional level up through the strategic level remains governed entirely by CMD's logic of sufficiency. Alongside this structure sits the conventional layer, supplied by Quid Pro Quo Plus, which gives Pakistan a proportionate response option at the conventional level without drawing on the strategic capabilities unless the situation demands it. India's Cold Start doctrine was built on the assumption that a conventional strike could be calibrated to sit beneath the specific threshold that would otherwise have triggered a wider response. Cohesive Deterrence removes that assumption by tying the conventional layer and the strategic layer together into one response, so that a strike aimed at any point on the spectrum draws on the whole of it rather than on the single layer it was aimed at.

A second element sits alongside the doctrinal structure: national resolve treated as a material component of deterrence rather than as rhetoric. Thomas Schelling's work on the threat that leaves something to chance, and the broader literature on manipulated risk, both treats demonstrated political will as a force multiplier independent of the raw balance of forces. A state whose resolve is visibly tied to an existential stake is harder to predict in a crisis, and that unpredictability raises the cost of miscalculation for an adversary weighing a limited strike. Pakistan's emphasis on

resolute national will, set against an increasingly assertive Indian strategic posture, reflects this standard deterrence logic.

Cohesive Deterrence has an institutional structure behind it. At the top sits the National Command Authority (NCA), the civil-military body that fuses political authority with military execution across all three services through its Employment Control Committee and Development Control Committee. Beneath it, the Strategic Plans Division (SPD) coordinates the nuclear structure, overseeing the Army Strategic Forces Command (ASFC), the Naval Strategic Force Command (NSFC), and the Air Force Strategic Command (AFSC), so that nuclear-capable delivery systems across the three services operate under one coordinated authority. Since August 2025, same logic has moved to the conventional layer, with the establishment of the Army Rocket Force Command (ARFC). It brings Pakistan's conventional rocket and missile units, the Fatah series among them, under a dedicated three-star authority kept administratively distinct from Strategic Forces. Together, these institutions give Cohesive Deterrence its concrete form with a single civil-military authority above that keeps the entire system answerable to one chain of command.

The fourth element is capability at each rung of the structure. The Fatah series illustrates this: Fatah-1 and Fatah-2 established the initial guided-rocket capability at shorter range, Fatah-4 extended that reach to a demonstrated 750 kilometres as a ground-launched cruise missile, and Fatah-3, disclosed in May 2026, added a ramjet-powered profile capable of sustained speeds between Mach 2.2 and 3.5. This series gives QPQ+ a stand-off precision-strike option that earlier Pakistan lacked. J-10C deliveries, carrying the PL-15 long-range air-to-air missile, were substantially complete by early 2026. A maritime dimension followed with the commissioning of the first Hangor-class submarine in April 2026. Its significance lies in the addition of survivable, sea-based strike geography, which forces India's anti-submarine planners to account for a far wider stretch of ocean. At the strategic level, Shaheen, Ababeel, and Nasr remain the declared backbone of CMD, spanning medium- and long-range ballistic strike, multiple-warhead capability, and low yield, short-range use respectively. Together, they give CMD the range and flexibility to cover every level of the spectrum, from battle use to the strategic level.

The fifth element is sufficiency rather than parity, consistent with the principle that has guided Pakistan's deterrent since 1998. The near eighteen percent rise in Pakistan's defence allocation this year, bringing the total to approximately Rs 3 trillion, reflects the cost of sustaining a mission that now spans sub-conventional, conventional, strategic, and maritime domains at once, not an

attempt to match India system for system. Cohesive Deterrence rests on the same distinction: an integrated response achieved without an arms race is a self-imposed constraint on Pakistan's programme.

The war of May 2025 remains the clearest demonstration of why this architecture matters. Over four days, India struck with artillery, loitering munitions, stand-off weapons, and cruise missiles used against Pakistan for the first time, hitting key military installations across Pakistani territory. Pakistan's response followed within hours, extending across dozens of locations and combining drones, missiles, and air defence in a tempo that left India little opportunity to calibrate a controlled escalation. This is the outcome an integrated response system is designed to produce: an adversary unable to identify a limited, safely calibrated option on the escalation ladder. As India moves further toward offensive integration, adding new defence systems and consolidating its theatre commands, Pakistan needs to keep moving in the same direction, building on the resolve that has anchored its deterrence posture since 1998. The institutional, conventional, and strategic components of Cohesive Deterrence are already in place, and what remains is their continued consolidation. At the same time, a more stable region will require both states to invest in bilateral confidence-building measures and reliable communication mechanisms, so that neither side miscalculates the other's intentions in a future crisis.

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Link: <https://defensetalks.com/pakistans-cohesive-deterrence-and-the-architecture-of-south-asian-stability/>

Info-Brief | Info Brief: India Nuclear Capable Missile

Malik Kashif

The institutional foundation of India's missile programme was laid with the establishment of the Defence Research and Development Organization (DRDO) in 1958 and the Indian Space Research Organization (ISRO) in 1969. A major development came in 1983 with the launch of the Integrated Guided Missile Development Programme (IGMDP), led by Dr. A.P.J. Abdul Kalam, which paved the way for India's indigenous missile program, including the Agni series. However, the DRDO remains the principal organization responsible for missile research and development.

India has one of the most diversified missile capabilities in the nuclear domain, including short-range tactical missiles, intermediate-range ballistic missiles, long-range ballistic missiles, intercontinental-range ballistic missiles, and submarine-launched ballistic missiles (SLBMs). For the development of cruise missile, New Delhi has a BrahMos, a joint venture between Russia's NPO Mashinotroyeniya and India's DRDO, started in 1998. The operational control of these delivery system rests with the tri-service Strategic Forces Command (SFC), established in 2003. New Delhi missile modernization programme has evolved not only through quantity expansion but also through significant quality enhancement ensuring survivability, and operational readiness.

The shift from liquid-fuel to solid-fuel propulsion, the use of road-mobile, rail based, canisterized launch systems, improved guidance, advanced navigation systems, and the creation of longer-range ballistic missiles have placed India's nuclear forces on a readiness posture.

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Book Review | Nuclear War: A Scenario

Shahwana Binte Sohail

Annie Jacobsen's *Nuclear War: A Scenario* is a compelling and thought-provoking analysis of the risks associated with modern nuclear weapons and the structural weaknesses of contemporary deterrence mechanisms. Jacobsen blends investigative journalism and a fictional scenario-based story of a nuclear crisis that starts with a North Korean strike on the United States and quickly spirals into a worldwide nuclear war. She provides insights into the speed with which a nuclear crisis can spiral beyond political control, based on interviews with former military officers, nuclear scientists, intelligence experts, policy makers and on declassified documents. The outcome is an engaging and insightful contribution to nuclear strategy, escalation, deterrence and crisis management.

Nuclear War: A Scenario is fundamentally about the fragility of contemporary nuclear command and control systems and the very short time frame for political decision-making that is at stake in the event of a nuclear war. In minute-by-minute detail, Jacobsen shows how any one missile could set off a chain reaction among several nuclear nations, leading to escalation, as a result of miscalculation, technological limitations, and military procedures. It also explores how early-warning systems work, how the "launch-on-warning" doctrine operates, how U.S. presidents make decisions, and the human and humanitarian implications of nuclear war. After all, is the current deterrence system adequate to deter catastrophic escalation in the nuclear era?

The book's main thesis is that the current systems of nuclear command and control are based on very short decision-making cycles. National leaders can be given just a few minutes to consider threats and give approval for a response. In great detail, Jacobsen describes the operation of missile detection systems, early-warning systems, the process by which the President makes decisions, and retaliatory doctrines. She chronicles minute-by-minute the events that might lead to a large-scale nuclear exchange between multiple nuclear powers following a single nuclear launch, given uncertainty, technological limitations, and institutional pressures.

A significant strength of the book is its ability to translate complicated strategic and technical concepts in an engaging, clear and accessible manner without oversimplifying them. Things such as launch on warning and ballistic missile trajectories, electromagnetic pulse (EMP) effects and nuclear command and control (C2) systems, and deterrence are explained understandably. This

accessibility is especially helpful in view of the technical aspects of nuclear policy debates. In this book, Jacobsen manages to convey the expertise of specialists in a way that is accessible to policymakers, students, researchers, and the general public without being superficial.

The book also importantly brings attention to the humanitarian impacts of nuclear war. Jacobsen vividly describes the immediate effects of a nuclear detonation, such as blast destruction, thermal radiation, firestorms, and radioactive fallout. More importantly, she explores the enduring effects of a nuclear war, including nuclear winter, crop failure, famine, and a general breakdown of society. In doing so, she invites readers to consider a wide range of considerations apart from military and strategic ones, and to contemplate the human toll of nuclear arms.

Meanwhile, the book challenges the reader to think critically about the assumptions it makes and its analytical method. However, Jacobsen argues that nuclear systems remain vulnerable to rapid and potentially systematic breakdown. Through her narrative, she portrays a highly pressurized strategic environment, where leaders are given little opportunity to make any real decisions once a crisis has started. Such a portrayal reinforces the book's main argument that nuclear decision-making processes are fragile and that an accelerated timeline can be dangerous. Her concerns are shared by Thomas Schelling, who alerted to the potential of coercion, brinkmanship and unintended escalation in nuclear crises. When it begins, it's difficult to stop it from escalating, as in the event of Jacobsen's scenario.

The methodology employed in the book is also noteworthy. Most of Jacobsen's work involves interviews with former officials and subject-matter experts and is based on publicly accessible documents and scientific research. This will allow some interesting information and make the story more realistic. Expert testimony plays a large role in the discussions about military procedure and the effects of nuclear weapons, giving the discussions credibility. But there are drawbacks to interviews. Experts' views and opinions are shaped by personal experience, institutional culture and professional bias. Moreover, much of the information about the elements of nuclear plans and command organizations remains classified and is therefore unconfirmed. Hence, it can be considered as an analytical exercise, and not as a prediction of how a nuclear crisis would play out.

A second problem is how rising tensions are dealt with in the book. Jacobsen outlines a series of events that happen in a very short amount of time and in a way that might seem too deterministic. The storytelling approach has the power to build a sense of urgency but can also make it seem like

there is no choice. The scenario is predicated on the assumption that there is limited space for diplomacy, crisis management, political restraint and strategic adaptation until escalation progresses towards global catastrophe. It might be argued, of course, that this is a “worst case” scenario, which was selected to raise awareness of the dangers of nuclear weapons and not necessarily an accurate and unbiased representation of the state’s behaviour. In principle, thinkers such as Kenneth Waltz have suggested that for rational states, nuclear deterrence makes war costly and thus helps to create strategic stability. Jacobsen’s account challenges this positive perspective and warns that deterrence fails through accident, misconception and erratic decision-making with potentially deadly consequences.

Even with its shortcomings, the book is an effective reminder of the catastrophic effects of miscalculations and rapid escalation. The book also has some drawbacks in the discussion of international politics from the present perspective of security studies. The book deals mostly with the nuclear situation in the United States, Russia and North Korea; and less attention is paid to the situation in other nuclear regions, particularly South Asia. The analysis could have been more comparative in nature in the context of the current deterrence equation between India and Pakistan and the crisis. Similarly, in the field of strategic stability and nuclear decision-making, the role of new technologies like Cyber warfare, AI, autonomous systems etc is also relatively small considering the significance of these technologies.

Yet for all these drawbacks, *Nuclear War: A Scenario* is a valuable addition to the debate on nuclear security and strategic stability. It does not provide a completely new theory or point of view on nuclear war, but it does make people think about the reality and the potential for destruction of nuclear war. Jacobsen succeeds in making the technical world of strategy accessible to a lay audience and conveying this world as a lively and entertaining story. Those who don’t agree with her assumptions or conclusions will find it hard to ignore the issues raised. *Nuclear War: A Scenario* is a timely and thought-provoking book deserving the attention of scholars, policymakers, strategic analysts and informed readers. Although it may not be analytically balanced as it uses a worst-case scenario, the advantages of this far outweigh the drawbacks. Jacobsen points to the irreversibility of nuclear decisions, their swiftness, and their increasing complexity, to remind us that nuclear risks remain one of the most pressing threats to international security. The book also invites dialogue with other studies of nuclear deterrence, strategic stability and escalation by such figures as Thomas Schelling and Kenneth Waltz. Nuclear policy, deterrence and escalation are major themes in the book and for students and practitioners in strategic studies and security affairs,

it can be a cautionary tale and a valuable contribution to the ongoing debates about deterrence, escalation and global stability.

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**Book Review | Artificial Intelligence in Military Technology:
Sociological, Cultural and Ethical Perspectives**

Shahwana Binte Sohail

The book *Artificial Intelligence in Military Technology: Sociological, Cultural and Ethical Perspectives*, edited by Kairi Talves and Dierk Spreen, is an interdisciplinary volume on military Artificial Intelligence (AI). The book discusses AI from a sociological, ethical, legal, and organisational point of view. The volume contains contributions for scholars and practitioners of various fields with a background in military studies, sociology, law, communication, psychology, and human-computer interaction. The editors state that technology cannot be the only lens through which we have to view military AI. They stress that it needs to be understood in a wider social, ethical, legal and institutional framework, as these factors would affect both the evolution and use of AI in military operations.

The main thesis of the book is that AI is becoming an ever-growing part of the modern military, but it should be considered as a means of achieving defence capability under the effective and responsible control of humans with legal accountability. The editors adopt a balanced perspective on AI, viewing it as neither a panacea nor a threat. They reject both technological determinism and call for an absolute prohibition on military AI. Instead, they advocate the responsible governance of military AI through robust institutions, ethical guidelines, and adherence to international law. This balanced view sets the volume apart from many current debates that tend to be split between techno-optimism and techno-alarmism.

The book is divided into three interrelated sections. Each section contributes to developing the book's central argument. The first part, *Understanding AI*, looks at the social and cultural aspects of Military AI. It discusses public perception, science fiction, ethical issues and technological acceptance. The contributors dispel some of the widely held myths about autonomous systems. They believe military uses of AI are as much about culture as anything, and attitudes to the technology are just as much cultural narratives.

Ethical enhancement, cyborg soldiers, AI and regulation, as well as public acceptance of AI in the Estonian Armed Forces, are also discussed in the first section. This combines conceptual with empirical evidence. The contributors demonstrate that technological innovation cannot be

achieved without more than technical ability. The organisational structure, public trust and political context are also very much part of the equation when it comes to the adoption of military AI.

The second part of the book looks at the strategic consequences of AI in war. It contends that, besides technological superiority, the effective integration of AI into doctrines, leadership and organisation is also essential for military success. The second part of the book looks at the strategic consequences of AI in war. It challenges the notion of technological determinism, the idea that technology alone drives military success and societal change. Instead, the contributors argue that technological superiority must be complemented by effective doctrine, leadership, and organisational integration. The contributors emphasise that, despite advances in AI, human judgment, responsibility, and accountability remain central to military decision-making. A key contribution of this section is its emphasis on responsible AI and meaningful human control.

The contributors argue that AI systems need to be kept in well-defined command structures. It is always the responsibility of human decision-makers, and they should be held accountable. One of the strongest arguments of the book is the difference between the computational power and moral responsibility of machines. The editors don't claim that AI is replacing traditional military leadership, but rather that it is a decision support technology. They also look at autonomous weapons systems in the context of international humanitarian law. Technological developments do not make the principles of distinction, proportionality, necessity and accountability inapplicable, as argued by the authors, especially through a legal perspective. AI takes away no legal liability; instead, the authors argue that AI reinforces the importance of substantive human control in military activities.

The third section of the book, Challenges for Communication, delves into the significance of communication and trust in military AI. It is not a good idea to trust AI and not have any limits on its applications. Rather, it should be guided by transparency, explainability and the design of the system with the human user in mind. It's not just about technical reliability. It also considers organisational communication, public communication, and cognitive warfare. The most significant contributions of the book relate to the importance of communication as part of responsible governance of AI. The contributors consider the conditions of institutional trust, effective communication, and public legitimacy crucial for the success of military AI.

An important contribution of the book is the balanced coverage of autonomous weapons by the editors. There are currently two sides to the discussion. One calls for the complete prohibition of autonomous weapons systems, while the other supports the continued development of military AI with minimal regulatory restrictions. The editors eschew both extremes. Rather, they call for responsible development, founded and based on ethics, law, real human control and institutional responsibility. This combination of perspectives benefits the volume, particularly for those who wish to include policymakers and policy guidance.

The volume is also commendable for dispelling the myths associated with AI. The contributors stress the point that present AI is not conscious, not intentional, doesn't have emotions, and doesn't have ethical sensibilities. By doing so, they separate the facts from popular myths about AI. This makes the book all the more valuable for policymakers and non-specialist readers who might be swayed by the media's sensational stories. The discussion is particularly timely as there are often high expectations and fears that drive public and policy discourse on military AI.

The book has some limitations, including the lack of significant coverage of recent examples of real-world operation. Readers might hope to see more detail in the analysis of current wars in light of the fast-changing character of AI-supported warfare. Examples of this kind could have made the theory in the book more relevant.

Another limitation of the volume is related to geographical diversity and the background of the authors. The contributors acknowledged the debates on the international level, but the volume largely focuses on the European and NATO perspective of military AI. It would have been more comparative, as it would have made use of the views of others, especially from the Global South. The geographical representation of the emerging technologies could have been broader, thus enhancing the analytical scope of the book given the global nature of emerging technologies.

Additionally, like other edited volumes, there are repeated themes throughout the chapters. There is reference to ethical responsibility, meaningful human control, trust and accountability throughout the book. The editors have a main argument that is supported by these themes. But the discussion of these again is sometimes a hindrance to the analytical flow of the volume. Also, there is some unevenness across the chapters because of the differences in the writing style and level of analysis. But these are not flaws which mar the scholarly value of the book. The volume is a valuable addition to the literature on military AI. It highlights the need to go beyond the

capabilities of military AI technologies to debate them. It should also have covered issues of governance, ethics, legal responsibility, organisational dynamics, as well as acceptance by society. One of the assets of this book is its interdisciplinary perspective. It indicates that the future of military AI is not just about tech and algorithms but also involves institutions, laws, ethics, and the individuals who will employ these technologies.

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