

Emerging Scenarios and Threats to Strategic Stability in South Asia

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POLICY BRIEF

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Overview

Balance of strategic stability in South Asia, a complex security environment, hinges on an array of variables that can tip it with radical, minuscule and macro, developments. The fast emerging and evolving situation of strategic competition and conflict in South Asia requires a closer examination of upcoming developments, emerging technologies, which may compromise this delicate balance. In light of these developments, it is critically important, to map possible scenarios that may emerge and impact escalation control and management. Recommendations are suggested, staying cognizant of these developments.

Analysis

Strategic stability as a concept rests on existence of circumstances and conditions that prevent protagonists, with nuclear weapons capability, in a crisis from displacing three critical elements: crisis stability; arms-race stability; and deterrence stability. In South Asia, particularly, the development of each crisis has taught different lessons to actors such as Pakistan and India; similarly, their acquisition of platforms and evolving strategic partnerships, are capable of affecting this delicate balance of strategic stability. The India-Pakistan 2019 crisis, in the wake of Pulwama attack and Balakot airstrike, underscores that this balance hinges delicately, due to fears of miscalculated and often risky application of military power. Emerging technologies, due to their disruptive nature, offer opportunities to protagonists to engage in manner fraught with risks of escalation. Therefore, it is critical to map these technological changes in the strategic landscape in tandem with strategic partnership that will eschew strategic stability in South Asia. Special attention ought to be dedicated to developments being undertaken by India, and its consequent play out for Pakistan's possible choices.

Emerging Technologies

Among the technological developments that are analyzed, for this policy brief, include: Hypersonic weapons; Dedicated Energy Weapons (DEWs) and High Powered Lasers; (Fully-Semi) Autonomous Weapon Systems; Standoff Weapon Systems; Remote Sensing and Communication Satellites, and Cyber capabilities; and Missile Defence systems. These technological platforms due to their disruptive capabilities offer options to decision makers whose deployment and use in a crisis have the potential of escalating a crisis and triggering a conflict between India and Pakistan.

Hypersonic weapons

A platform with destabilizing effects on strategic stability includes hypersonic weapons. These weapon platforms are able to, "travel with sheer velocity, highly maneuverable, and

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able to inflict high impact.”¹ The platform is able to travel up to Mach 5 and above. Given their ability to operate in endo-atmospheric altitude; it reduces their ability to be detected by radars. With velocity above Mach 5, they may target any farthest location within an hour. In the region of South Asia, India is known to be working on the technology by employing resources at the development of Hypersonic Technology Demonstrator Vehicle (HSDTV). It has undertaken test trials of a hypersonic technology demonstrator vehicle in 2020. The HSDTV is likely to be capable of reaching 6.5 Mach at an altitude of 32 km after achieving autonomous scramjet flight for up to seconds after making use of solid rocket launched booster.²

Directed Energy Weapons (DEWs) and High Powered Lasers

Emerging weapon systems also include use of non-explosive systems which are capable of emitting high powered lasers, radio waves, electromagnetic radiation and microwaves with the capability to damage and destroy, without fear of collateral damage, the intended targets. HPMS may also be used to inflict damage on communication and electrical grid systems without physically destroying the facility. At present US has successfully developed a similar system, which is known as the Counter-electronics High Powered Microwave Advanced Missile Projects (CHAMP).³ This system can be fixed on a cruise missile AGM-86C missile, which can be launched from an aircraft. After being released, the weapon then may direct high powered microwave energy on a target and render it ineffective, after a successful engagement. The weapon systems works by producing a strong surge of power in the electronic appliances and systems, including of weapon systems such as tanks, APVs and aircrafts, to render the electronic systems dysfunctional.

Last year, during India-China crisis there were reports of use of DEW weapon by China to compel Indian troops to vacate Chushul range over Pangong Tso lake, which was reportedly held by Indian troops. The claim was initially made by Professor Jin Canrong, Professor of International Relations at Renmin University, Beijing.⁴ The claim by Chinese scholar, however, was disputed by Indian Army and it denied use of any such weapons.⁵ However, if China did use this platform, then it appears to have successfully deployed an unconventional weapon to compel Indian forces without use of conventional kinetic weapons for meeting tactical or operational goals.

¹ Usama Nizamani, "Emerging Technologies, Crises, and Decision-Making: Impacts on South Asia's Security Calculus," in *Sustainable Development in a Digital Society*, (Lahore: Sang-e-Meel Publications, 2020), 186.

² Joseph Noronha, "A Growing Variety of Weaponry - Future Trends in Air Armament," in *SP's Military Yearbook 2019* (New Delhi: SP Guide Publications, 2019), 103-108.

³ CNN, "U.S. Air Force confirms electromagnetic pulse weapon," *YouTube*, May 25, 2015, <https://www.youtube.com/watch?v=qo2mNFF6uGw>.

⁴ Dave Makichuk, "Did China Use Microwave Weapons on Indian Soldiers?" *Asia Times*, November 20, 2020, <https://asiatimes.com/2020/11/did-china-use-microwave-weapons-on-indian-soldiers/>.

⁵ David Hamling, "India Disputes Claim That China Routed Their Troops with Microwave Blaster," *Forbes*, November 20, 2020, <https://www.forbes.com/sites/davidhambling/2020/11/20/disputed-claim-that-china-routed-indian-troops-with-microwave-blaster/?sh=2aebf1e824f6>.

Autonomous Weapon Systems

Growing relevance and application of artificial Intelligence may bring about development of semi-autonomous and autonomous weapon systems. Integration of AI may take place in existing weapon platforms to reduce the time taken, in kill-chain, to engage a target. India is reported to spend nearly US\$ 477 million in research and development towards the area of AI.⁶ It is highly likely that such R&Ds' application may hold dual-use applications; with possible end-use in military applications.

Loitering Munitions

Furthermore, another category of weapon systems with semi and fully autonomous capabilities include loitering munitions: UAV systems programmed to self-destruct upon engagement with the target. These kinds of drones with sophistication have been employed by Houthi Rebels against Saudi Arabia.⁷ These drones have targeted various installations in KSA: including airports, oil refineries, and cities. Another country that has successfully demonstrated capabilities of such drones include Turkey, which supplied Libya with various drones to take on Haftar's rebel forces.⁸ Similarly, in the recent limited war with Armenia to reclaim control of Nagorno Karabakh, Azerbaijan deployed different Turkish and Israeli drones, including use of loitering munitions to engage and neutralize various Armenian targets in Nagorno Karabakh.⁹ The use of drones in Libya and Armenia has proven to be game changing for respective side that deployed them. However, in a nuclearized environment, they threaten possibility of escalation between two nuclear armed countries.

Precision Guided Munitions and Standoff Weapon Systems

Other weapon systems with greater potential to disturb the equilibrium of balance in the region are Precision Guided Munitions (PGM) and Standoff Weapon (SW) systems. The PGM weapon systems such as the SPICE bomb¹⁰, which the Indian Air Force deployed during its airstrike in Balakot, including standoff weapon platforms, allow the capability to release weapon systems without crossing international borders. This may erode mutual conventional deterrence between nuclear powered states, especially India and Pakistan or China and India. Among these categories, weapon systems such as cruise missiles with conventional warheads and beyond visual range PGMs may be used for precision targeting

⁶ S. Kulshrestha, "Artificial Intelligence an India Specific Plan," in S.P's Military Yearbook 2019 (New Delhi: SP Guide Publications, 2019), 121-123.

⁷ "Iran-backed Houthis in Yemen Ramp up Drone, Missile Attacks on Saudis," *NBC News*, last modified March 12, 2021, <https://www.nbcnews.com/news/world/iranian-backed-houthi-rebels-yemen-ramp-drone-missile-attacks-saudi-n1260488>.

⁸ "Game-changing drones elevate Turkey as major power broker: Fukuyama," *Daily Sabah*, April 7, 2021, <https://www.dailysabah.com/business/defense/game-changing-drones-elevate-turkey-as-major-power-broker-fukuyama>.

⁹ Robyn Dixon, "Azerbaijan's Drones owned the Battlefield in Nagorno-Karabakh — and showed Future of Warfare," *Washington Post*, November 12, 2020, https://www.washingtonpost.com/world/europe/nagorno-karabakh-drones-azerbaijan-aremenia/2020/11/11/441bcbd2-193d-11eb-8bda-814ca56e138b_story.html.

¹⁰ Vasudevan Makunth, "Boom or Bust: What Science Tells Us about What Went Down in Balakot," *The Wire*, last modified March 10, 2019, <https://thewire.in/security/boom-or-bust-what-science-tells-us-about-what-went-down-in-balakot>.

without going behind enemy lines. India for this purpose could deploy use of BrahMos Air Launched or Ground-based Cruise Missile in a future crisis, provided it is willing to move fraught with risks of escalation. A possibility which may be likely exercised by India in a future crisis, in order, to avoid its own attrition cost.

Remote Sensing and Communication Satellites

For India space remains as a force-multiplying domain to offer an impetus to its overall military power. To this end, India already has a strategic reserve of navigation, communication, intelligence, surveillance and reconnaissance based satellites. The country also possesses an independent navigation capability, which is being harnessed for civil, commercial and military applications.¹¹ To meet this task, India has a constellation of seven navigation satellites. Overall, India has nearly 295 satellites placed in the space to meet various commercial, civil and military needs.¹² The Rukmini communication satellite offers independent communication services to Indian Navy, whereas, GSAT-6 and 7 offer similar services to Indian Army, while GSAT-7A and 7C offer these services to the Indian Air Force. India's Radar Imaging Satellites consist of RISAT-2, 2-B, and 2-BRI.¹³ It has similarly, over the years, demonstrated its anti-satellite capability and destroyed satellites in lower Earth orbit.¹⁴ It is also assumed that the ASAT capabilities will contribute towards enhancing India's capability to intercept intercontinental missiles. These capabilities, if also incorporated may be critical in modifying its conventional and nuclear force posture towards Pakistan, by exercising an offensive one, and may significantly impact strategic stability: especially the component of crisis stability.

In addition to this, Indian military, under the JDIAF 2017 is seeking to erect a cyber-command as part of its Integrated Defence Staff, headquartered in New Delhi, along with the space, cyber and special operations commands. The use of cyber capabilities may be used in a possible heightened crisis or may be used to complement its ongoing hybrid warfare efforts, through use of proxies, against Pakistan.

Ballistic Missile Defence System

One of the major threats cited to strategic stability, in South Asia, is development and deployment of Ballistic Missile Defence systems. In South Asia, India is aggressively moving towards acquisition, procurement and development of similar weapon systems. India's Anti Satellite Weapons capabilities are closely linked with its ballistic missile programme. The Theatre Missile Defence (TMD) is also under development which was converted from the

¹¹ Nizamani, "Emerging Technologies, Crises, and Decision-Making," 189.

¹² R. Pant, "Satellites - The Force Multiplier in Space," in *SP Military Yearbook 2019* (New Delhi: SP Guide Publications, 2019), 93-97.

¹³ Ghazala Y. Jalil, "Briefing on India's Space Programme" (Conference session presented at Roundtable Discussion on India's Space Programme: Global Implications-Briefing on India's Space Program, Islamabad, February 25, 2020).

¹⁴ Manoj Joshi, "India's ASAT Capability has been around for Some Time Now," *ORF*, March 28, 2019, <https://www.orfonline.org/research/indias-asat-capability-has-been-around-for-some-time-now-49347/>.

progress made in Akash and Rajendra Missiles.¹⁵ The TMD can intercept a missile up to the range of 2000 km.¹⁶ The Akash Missile system has been tested sixteen times. Furthermore, Ballistic Missile Defence (BMD) is one of the parts of the four point Next Step in Strategic Partnership concluded between India and United States. At present, disagreement lingers between US and India, on sale of a particular system to the latter by the former: India remains interested in buying the THAAD system, while US is only willing to sell the Patriot missile system to India. Similarly, US also denied sale of Arrow missile system to India. It is also developing a two-stage interceptor for its BMD programme with assistance from Israel: with focus to intercept missiles both at exo-atmospheric and endo-atmospheric levels of earth. Along with this, Prithvi Defence Vehicle (PDV), another system under development, can intercept incoming missile at 150 km altitude.¹⁷ PDV in tandem with Prithvi Air Defence (PAD), if successfully developed, can intercept targets in the Earth's exo-atmosphere. Whereas, Ashvin Air Advanced Defence (AAD) can intercept missile up in the endo-atmosphere of earth up to 20 Kms. The country is also in the process of procuring S-400 from Russia, which is also known to be superior to PDV.¹⁸ In combination to this, India is also known to rely on swordfish radar to detect and track an incoming missile: the system was built with technical assistance from France and Israel.¹⁹ To complement its real-time surveillance capability, Israel has also provided India with Phalcon Airborne Warning and Control System (AWACS) which is also capable of detecting and tracking missiles. Most importantly, India is also procuring Konsberg Defence and Aerospace /Raytheon National Advanced Surface-to-Air Missile System (NASMAS-II).²⁰ The cost of this system is estimated around US\$ 3 billion.²¹

The consequences of BMD are manifold for mutual strategic deterrence and strategic stability. Operationalizing BMD may enable a sense of over confidence and contribute to risk taking and possible adventurism. One likely outcome is the offset of arms race instability in the region. To illustrate, consider the possibility that it takes 20 missiles to neutralize 10 ballistic missiles. It will push India to upscale the number of batteries and subsequently compel Pakistan to proportionally upscale number of ballistic missiles, including decoys, for redundancy purposes. With perceived incentive of BMD to preemptively use conventional or nuclear weapons systems to attack counter-force or counter-value targets India will compromise crisis-stability. Also any conventional action under the illusion to exercise escalation dominance will compromise deterrence stability.

¹⁵ Zafar Nawaz Jaspal, "Ballistic Missile Defense: Implications for India-Pakistan Strategic Environment," *NDU Journal* XXV, no.1, (2011): 1-26.

¹⁶ Jaspal, "Ballistic Missile Defence", 6-20.

¹⁷ "India Strengthens its Ballistic Missile Defence Programme with a Success," *Business Insider*, September 24, 2018.

¹⁸ "India Strengthens Ballistic Missile Defence"

¹⁹ Franz Stefan Gady, "India's Advanced Air Defence Interceptor Shoots Down Ballistic Missile Target in Test," *Diplomat*, August 3, 2018, <https://thediplomat.com/2018/08/indias-advanced-air-defense-interceptor-shoots-down-ballistic-missile-target-in-test/>.

²⁰ Gady, "India's Air Defence Interceptor."

²¹ Gady, "India's Air Defence Interceptor."

Indo-US Strategic Partnership

In South Asia, India at present has entered in various natures of strategic partnerships with the United States to contain the threat perceived mutually by US and India, from China. In 2002, India has entered into General Security of Military Information Agreement, followed by other major agreements in 2016 with US, such as, Major Defence Partner; Logistics Exchange Memorandum of Agreement (LEMOA), and Communications Compatibility and Security Agreement (COMCASA).²² Later in 2018, India was also accorded with Strategic Trade Authorization Tier 1 Status by the United States. In 2020, the two sides have also entered in Basic Exchange and Cooperation Agreement (BECA).²³

These agreements, on one hand, illustrate importance of India for United States in its pursuit of its Indo-Pacific strategy to contain China. On the other hand these demonstrate that with passage of time, security assistance being extended by US may not only enhance India's operational military capability, but also provides real-time intelligence access to India. It is likely that access to such intelligence could embolden India to facilitate planning of precision strikes through conventional military power. It also appears that through exchange or access to real-time intelligence, India may implicitly revise its nuclear force posture from "No First Use" to possible "First Use", possibly through application of conventional weapon systems to target Pakistan's counter-force (nuclear) weapons during a heightened crisis.

Future Crisis: Possible Scenarios

First Scenario

One possible scenario is based on Pulwama-Balakot 2019 crisis. It is possible that any future incident inside Indian occupied Jammu and Kashmir may allow India to resort to cross border raid, once again. It must be remembered, that though Prime Minister Narendra Modi embodies a bullying attitude, he takes comfort in denial of likely costs and ramifications of his possible actions. This was seen post-Balakot and Pakistan's retaliatory airstrikes. PM Modi was unwilling; to admit the downside of the adopted course of action. Conformist and docile approach of a large segment of the Indian media and the inability to hold its leadership accountable by BJP voters as well as opposition parties encourages Modi's belligerence towards Pakistan. It also denies possibility of an honest debate surrounding military and other political crisis involving Pakistan: either in media or in public. Therefore, in absence of strong public and media criticism, it is likely that Modi in order to appear as a strongman may resort to a repeat of Balakot. Consequently, Pakistan will be under compulsion to retaliate in kind.

²² Ministry of External Affairs, Government of India, *India-U.S. Relations*, (New Delhi: Ministry of External Affairs - Government of India), https://mea.gov.in/Portal/ForeignRelation/India-US_relations.pdf.

²³ Ministry of External Affairs, "India-U.S. Relations."

Second Scenario

There is a possibility that India may deploy Ballistic Missile Defence (BMD) during a heightened and escalated crisis. However, prior to operationalizing it, India may first try striking Pakistan's nuclear weapons during such a crisis through conventional weapons such as precision guided munitions (PGM), cruise missiles (both ground and air launched). After having struck some of Pakistan's nuclear arsenal, it may attempt to neutralize the remaining onslaught by launching its BMD. However, as iterated earlier, BMD capability may contribute to sense of overconfidence and propensity for risk-seeking by Indian leadership. It may miscalculate that it can employ BMD to execute kinetic action against Pakistan. This includes the subsequent, yet doubtful, attempt by India to neutralize Pakistan's nuclear arsenal and undertake retaliation without any fear of counter-retaliation from Pakistan. Despite this, it is likely that some of Pakistan's ballistic warheads may evade BMD systems. Given there are questions regarding complete accuracy of BMD systems to completely neutralize ballistic projectiles. Such kind of a scenario, although possible, is improbable and fraught with escalation, threat of mutual destruction and serious costs for India in return.

Third Scenario

One of the least considered scenarios is the hybrid use of semi-autonomous or manually operated drone platforms by terrorist groups, in Balochistan and Karachi, in tandem with cyber-attacks. In its active opposition to Belt and Road Initiative, India has resorted to multiple attacks through use of proxies. The recent blast in Quetta²⁴, attack on Karachi Stock Exchange building,²⁵ Gwadar Pearl Continental hotel,²⁶ Chinese Consulate in Karachi,²⁷ targeting of labor workers, Hazara community²⁸ or security personnel,²⁹ Chinese nationals³⁰, and sports stadium in Balochistan³¹, are all some of the examples of that proxy warfare.

²⁴ Ghalib Nihad. "5 Killed, at Least a Dozen Injured in Blast at Quetta's Serena Hotel," *Dawn*, last modified April 22, 2021, <https://www.dawn.com/news/1619534>.

²⁵ FE Online, "Karachi PSX Attack Highlights: BLA-linked Majeed Brigade Claims responsibility," *The Financial Express*, June 29, 2020, <https://www.financialexpress.com/defence/pakistans-stock-exchange-terrorist-attack-karachi-latest-updates/2007192/>.

²⁶ "5 People Killed in Gwadar PC Hotel Attack; Army Concludes Clearance Operation," *Dawn*, May 12, 2019, <https://www.dawn.com/news/1481840>.

²⁷ "'Attack on Chinese Consulate in Karachi Planned in Afghanistan with Support of Indian Agency'," *Dawn*, January 11, 2019, <https://www.dawn.com/news/1456906>.

²⁸ "Pakistan Coal Miners Kidnapped and Killed in IS Attack," *BBC News*, January 3, 2021, <https://www.bbc.com/news/world-asia-55522830>.

²⁹ Saleem Shahid, Behram Baloch, Pazir Gul, "20 Security Personnel Martyred in Two Attacks," *Dawn*, October 16, 2020, <https://www.dawn.com/news/1585319>.

³⁰ "Pakistani Militants Shift Focus to Cities in Targeting of Chinese," *Nikkei Asia*, December 27, 2020, <https://asia.nikkei.com/Spotlight/Belt-and-Road/Pakistani-militants-shift-focus-to-cities-in-targeting-of-Chinese>.

³¹ "14 Injured in Balochistan's Hub Football Stadium Blast," *Express Tribune*, April 13, 2021, <https://tribune.com.pk/story/2294581/14-injured-in-balochistans-hub-football-stadium-blast>.

Use of drones may increase likelihood of survivability of the terrorists operating these drones from distance. Furthermore, targets such as military bases, hotels, airports, refineries, commercial high rise buildings, and consulates, are likely to remain high value targets. For this purpose, either rotary wing or purpose built loitering munition drones may be employed. These drones may be smuggled into Pakistan through existing smuggling routes on land and sea, both from Afghanistan, Iran or from sea route through Makran coastal belt. India may use ongoing terrorist attacks to reinforce a perception at the FATF that Pakistan lacks the capacity to deny handle terrorism and concomitant funding channels.

India may also employ subversive cyber tools to attack vulnerable high-impact targets, such as hospitals, power plants, dams, airports, air traffic control systems, stock exchange, banking networks, and data centers held both by government and large scale private entities. Unlike use of drones or other means, cyber-attacks are unlikely to translate into a physical retaliation or escalation; their use may remain confined to the cyber domain with serious physical implications for the affected protagonist.

Overall, this eventuality falls under stability-instability paradox, where at the strategic level; stability between adversaries may persist, whereas, at the sub-tactical level, the two adversaries engage in acts contributing to instability, while the two actors refrain from escalating conflict to the strategic level.³²

Recommendations

- Considering the utility of loitering-munitions drones, Pakistan may consider technology-transfer option from allied countries leading to indigenous development of such platforms. Pakistan may war game scenarios along with political leadership and representatives of national institutes, to better prepare for a contingency which entail use of PGM weapons; air or ground launched cruise missiles from India.
- The concept of a cyber-command under the Joint Staff Headquarters to augment cyber-warfare needs to be studied. The measure is necessitated to counter India's offensive cyber warfare capability.
- Considering the force-multiplying effect and critical importance of space based assets to conventional and strategic weapon platforms, Pakistan needs a buildup of intelligence, surveillance, reconnaissance, navigation and communication related capabilities in space: especially by development of remote sensing imaging, and a constellation of communication and navigation satellites for Pakistan's conventional and strategic weapon platforms.
- Economic growth and fiscal discipline are closely linked to credibility of Pakistan's deterrence capability. Therefore, overcoming budgetary deficit is critical for improving conventional capabilities.

³² Rajesh Rajagopalan, "What Stability-Instability Paradox? Subnational Conflicts and the Nuclear Risk in South Asia," *SASSU Research Paper No. 4*, accessed April/May 22, 2021, <https://www.files.ethz.ch/isn/99913/RP%20No%2004.pdf>.

- Pakistan may deploy standoff capabilities to neutralize or degrade India's BMD capabilities. Use of swarm drones, such as loitering munitions, including cognitive electronic platforms by PAF, can be used to clutter BMD's acquisition or tracking radars.
- Development of Multiple Independent Re-entry Vehicles to restore the strategic balance in South Asia and to neutralize instability inducing effects of India's BMD programme.
- Given the withdrawal of US forces from Afghanistan, India may use the destabilized space, in future, to smuggle purpose built loitering munitions for proxies in Balochistan, and KPK. To counter this, Pakistan needs to upscale its Intelligence Based Operations in Balochistan and KPK to deny emerging terrorist groups the space to make use of such high impact platforms to threaten high value targets. Furthermore, disruption of groups involved in transportation and smuggling of such weapons is necessitated for thwarting their delivery to Pakistan.