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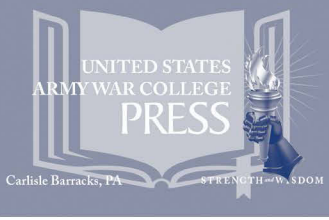

INDIA'S EVOLVING NUCLEAR FORCE AND ITS IMPLICATIONS FOR U.S. STRATEGY IN THE ASIA-PACIFIC

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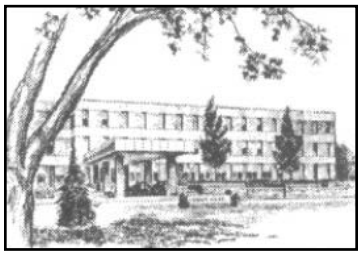

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June 2016

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Comments pertaining to this report are invited and should be forwarded to: Director, Strategic Studies Institute and U.S. Army War College Press, U.S. Army War College, 47 Ashburn Drive, Carlisle, PA 17013-5010.

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FOREWORD

As India rises in the international system, its foreign and defense policies are attaining greater influence in shaping global security. This Letort Paper explores Indian nuclear policy approaches and views, and makes a major contribution to our understanding of this factor of growing significance in Asian security.

India's nuclear arsenal development is generating new technical options for its nuclear strategy. India is developing intercontinental ballistic missile (ICBM)-range Agni-V and Agni-VI ballistic missiles, and is claiming that these will be able to host multiple nuclear warheads. It is also building a new generation of short-range and potentially nuclear-capable ballistic missiles, and fielding an indigenous naval nuclear force. However, as these advancements interact with those of India's strategic rivals, China and Pakistan, they threaten to blur nuclear thresholds and elevate the risk of inadvertent nuclear escalation due to misperception.

Despite these shifts, India's official public nuclear doctrine has not been updated since 2003, and as such, does not assess the potential implications of its emerging technical options, nor the changing strategic environment for India's nuclear policy. While there is growing debate within India on the wisdom of continued adherence to the two main tenets of the Indian nuclear doctrine—no-first-use and massive retaliation—the official doctrine remains unrevised. This builds further ambiguity and risk regarding misperception of nuclear intentions and capabilities into the regional security context.

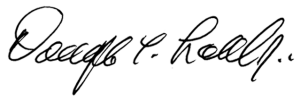
Alongside its nuclear force and nuclear doctrine policies, Indian nonproliferation policy is a third

component of its overall nuclear approach. Indian nonproliferation policy is probably in greater convergence with that of the United States today than at any point in recent history. As the authors argue, India is likely to remain a constructive force in international nonproliferation policy so long as it is not expected to terminate all relations with a state at the center of a proliferation dispute (i.e., Iran) for the sole purpose of resolving that issue.

These developments all have growing relevance for U.S. interests in the region. Washington and New Delhi are building an increasingly wide-ranging defense relationship, directed against rising Chinese regional aggression. However, this Letort Paper recommends that this relationship not preclude Washington from developing an awareness of the evolving nuclear regional security conditions, discussed previously, and how it may become involved, even if only diplomatically, in a future regional conflict featuring some of these dynamics.

The authors also suggest that the United States help address the absence of regional strategic dialogue between India, China, and Pakistan and encourage trilateral dialogue to clarify nuclear intentions and reduce the risk of a crisis emerging from misperception of these intentions. As this regional nuclear competition is increasingly extended to the naval domain, and within a context of rising Indian Ocean conventional naval competition, this Letort Paper further recommends that Washington develop crisis-planning scenarios around instances of regional naval nuclear misperception. Furthermore, the United States should work closely with India to enhance maritime intelligence and surveillance cooperation, improve their shared understanding of regional naval movements, and further reduce the risk of misperception.

The United States is focused on increasing political attention and military forces toward the challenges of maintaining stability and freedom of access in Asian security. The topics analyzed by this Letort Paper are of particular and growing importance to these U.S. regional interests.



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SUMMARY

India's growing and diversifying nuclear force raises challenges for its defense planners. New nuclear options need to be located within a holistic view of India's defense approach, with clearly assigned roles for conventional and nuclear forces dependent on the threats posed.

This also generates issues for U.S. defense planners. The current U.S. policy is to energetically assist the defense projection of India so as to help complicate the rise of China. This focus has an underlying assumption that the United States and India do not militarily threaten each other. This framing could potentially lead to an overlook or downplay of the potential negative effects from Indian nuclear force developments—and their related strategic interactions with Pakistan and China—in terms of the risk they pose to U.S. interests. In reality, the nature and domains of trilateral India-Pakistan-China nuclear and conventional competition are rapidly shifting, and close assessment of their potential effects is merited by the growing deployment of U.S. forces to the region.

This Letort Paper makes four main policy recommendations, directed to Washington and/or New Delhi.

Indian Nuclear Policy.

India's nuclear doctrine has not been publicly revised since 2003. The nuclear doctrine commits India to policies of "no-first-use" but "massive retaliation" if struck with nuclear weapons, with a force posture characterized by "credible minimum deterrence." However, the context of Indian nuclear policy has

changed since 2003, including new nuclear and conventional security challenges posed by China and Pakistan; growing concerns within India's strategic community regarding the credibility of the massive retaliation commitment in particular; and new nuclear force options that are suggestive of interest in a war-fighting capacity. These developments are all taking place without a substantive public nuclear doctrine review to incorporate these new conditions at an official level.

Indeed, this problem is not isolated to the nuclear domain of Indian defense; security policymaking also lacks integrated planning processes. New Delhi should conduct a public strategic defense review, including that of its doctrine, to assess the new threats it faces and clearly structure the role of conventional and nuclear forces in meeting those threats. In particular, this process should reiterate that nuclear weapons are only credible as a last-resort tool to prevent national extinction, with other threats to be met with stronger conventional defenses. This will reduce the blurring of conventional and nuclear force purposes as can be perceived in Indian strategic discourse, which is a consequence of the new regional, doctrinal, and force posture developments influencing Indian strategic perceptions in the absence of such an official review.

U.S. Approach Toward the Changing Nature of India-Pakistan Competition.

The United States emphasis on strengthening India's defense projection capabilities is driven by a dominant view of India in terms of a partnership to complicate the rise of China. This framing carries risks of U.S. diplomats and defense planners overlooking

or downplaying new nuclear and conventional tensions in the India-Pakistan relationship in U.S. crisis resolution simulation and planning.

A future India-Pakistan crisis will occur in a dramatically different political and strategic context from those before. New developments include: the fielding of a dedicated tactical nuclear missile by Pakistan and potentially nuclear short-range missiles by India; different views of where their bilateral nuclear threshold is and should be; continuing Indian interest in conventional limited war options despite the very low nuclear threshold announced by Pakistan; and, the contrasting breadth and levels of trust in the comparative U.S.-India and U.S.-Pakistan strategic relationships, which could encourage Indian decision-makers to further escalate their response to a crisis with an assumption of U.S. support. U.S. crisis intervention planning should recognize and build in the potential involvement of some of these factors. The last three India-Pakistan bilateral crises have been settled only through substantive U.S. intervention, and U.S. diplomats and forces should not let their principal regional focus on China preclude awareness of these new developments.

Initiating a Trilateral Regional Nuclear Dialogue.

The nuclear strategic thought and force development of India, Pakistan, and China are interlinked, but this is not recognized at an intergovernmental level through trilateral nuclear strategic dialogue. Bilateral nuclear dialogues between pairs within this triad have been attempted, but have largely failed due to the inherent reality that effective nuclear risk reduction measures, efforts to reduce strategic misperce-

tions, and greater clarity regarding adversary nuclear intentions can only be achieved by having the third member of the triad as a committed participant.

The United States should urge all three capitals to start such a trilateral nuclear dialogue. However, for such a dialogue to be successful, Washington may have to join the dialogue as a full participant. The Chinese hesitancy to join such a trilateral dialogue could be partly caused by the centrality of the United States in its nuclear and conventional threat perceptions, with poor prospects for substantive regional nuclear risk reduction progress without American participation.

U.S. Approach Toward Indian Ocean Naval Nuclear Competition.

India and China are fielding nuclear-armed submarine fleets, while Pakistan has outlined naval nuclear intentions. These states lack experience in operating nuclear-armed naval forces, further complicated by the fact that Indian Ocean territorial boundaries and access routes are growingly contested. As U.S. strategic attention and posturing is increasingly directed toward the Indian Ocean, diplomats and local forces should prepare for a crisis scenario involving these nuclear-armed naval forces, including potential confusion of adversary conventional and nuclear naval forces. Additionally, Washington should engage New Delhi on naval surveillance technology cooperation to help disambiguate Chinese nuclear from conventional naval movements and obtain a mutually clearer view of the effects of regional nuclear-armed naval competition.

INDIA'S EVOLVING NUCLEAR FORCE AND ITS IMPLICATIONS FOR U.S. STRATEGY IN THE ASIA-PACIFIC

INTRODUCTION

India has not publicly updated its nuclear doctrine, which commits it to a no-first-use (NFU) policy along with massive retaliation to a nuclear attack and a force posture of credible minimum deterrence (CMD), since 2003. However, India's nuclear force is notably changing from the time that the doctrine was released. Today, India is fielding a nuclear-armed ballistic submarine (SSBN) fleet, testing missiles approaching the intercontinental ballistic missile (ICBM) range, researching multiple independently targetable reentry vehicle (MIRV) warheads, and developing potentially nuclear short-range missiles.

The type of nuclear and conventional challenges India faces from Pakistan and China, as its two principal adversaries, has also substantially changed since the Indian nuclear doctrine was released in 2003. To begin with, there is a noticeable blurring of conventional and nuclear forces and perceived missions in the strategic perceptions of New Delhi, Islamabad, and Beijing. This is demonstrated in: the interest of India and China in conventional and potentially nuclear-capable ballistic and cruise missiles as a growing element of their force posturing against each other; the stated intentions of Indian commanders to attack adversary missile launchers regardless of their potential nuclear missions; the popular Indian framing of all Chinese naval movements, whether by nuclear-armed or conventional vessels, as part of a creeping monolithic advance; the corollary existence of strategic per-

ceptions within India that its own SSBN fleet could have significance for conventional naval deterrence; and in Pakistan, a view that any Indian cross-border conventional strike, no matter its scale, should be met with a tactical nuclear response tailored for that level of warfare.

These developments have great relevance for U.S. regional interests, defined as securing a stable Indian Ocean environment that protects freedom of access, and reducing the salience of nuclear weapons in the region. This Letort Paper will highlight the importance of U.S. interests concerning the recent developments in Indian nuclear force posturing, strategic perceptions, and nonproliferation approaches. It will also explore current and potential Indian nuclear and conventional interactions with Pakistan and China, based upon their present trajectories. While there are policy measures available to both New Delhi and Washington to stabilize the regional nuclear context, a detailed understanding of the above developments is necessary to motivate their implementation.

INDIAN NUCLEAR FORCE DEVELOPMENTS

India is advancing in all aspects of its technical nuclear capabilities. Ballistic missiles of ever-greater range are being planned and unveiled, while its long-awaited SSBN fleet is finally taking operational form with the launch of the Indian Naval Ship (INS) *Arihant*. Indeed, the emerging structure of India's nuclear force on its current trajectory appears to be leading away from its stated posture concepts of "CMD" and "assured retaliation," based upon ensuring a minimum deterrent able to guarantee retaliation to NFU by China or Pakistan.

Instead, recent development projects such as MIRV missiles, the 700km-range Shourya nuclear missile, and the potentially nuclear-capable short-range Prahaar and Brahmos missiles, become suggestive of Indian interest in a war-fighting capacity. There is growing pressure within India for the government to include war-fighting options in its nuclear approach, and a retired Indian Army officer and nuclear expert has argued that the advent of the Shourya and Prahaar "confer a war-fighting capability."[1]

Indian Nuclear Delivery Vehicles.

Details of India's current nuclear delivery vehicles, inducted and developing, are provided in Table 1.

Type	*Range (km)*	*Payload (kg)*	*Current Status*
Land-based missiles			
Prithvi-I	150	1,000	Deployed with the Indian Army 333rd and 355th Missile Groups. Less than fifty launchers believed to be deployed.
Agni-I	700	1,000	Deployed with the Indian Army 334th Missile Group from 2004.
Shourya	700	1,000	Under development. Land-based variant of K-15 Sagarika.
Agni-II	2,000	1,000	Deployed with the Indian Army 334th Missile Group, although full operational deployment and continuing development status uncertain.
Agni-II+	2,000+	1,000	Under development.
Agni-III	3,000	1,500	Under development.
Agni-IV	3,500	1,000	Under development.
Agni-V	5,000	1,500	Under development.
Agni-VI	6,000	1,500	Under development.

Table 1. Indian Nuclear Forces in 2016.[2]

Type	*Range (km)*	*Payload (kg)*	*Current Status*
Sea-based missiles			
Dhanush	350	500	Induction underway but not operational.
K-15 (Sagarika)	700	500-600	Development complete; integration with *Arihant*-class SSBN underway.
K-4	3,500	1,000	Under development.
K-5	5,000	N/A	Under development.
Aircraft			
Mirage 2000H	1,800	6,300	Squadron 1 or 7 of 40th Wing, deployed at Gwalior Air Station, is reported to have been assigned a nuclear mission. The Mirage fleet is undergoing capability improvements, adding twenty years to its lifespan, from July 2011.
Jaguar IS/ IB	1,600	4,775	Reports suggest two squadrons at Ambala Air Force station are assigned nuclear missions. The Jaguar fleet is undergoing capability improvements, which will extend its lifespan past 2030.
MiG-27	1,760	3,500	Some MiG-27s may be assigned nuclear roles. However, safety issues have led to a decision to phase out the MiG-27.
Sukhoi Su-30MKI	3,000	8,000	The Strategic Forces Command has assigned a nuclear role to 40 Sukhois. India intends a fleet size of 272 planes.
Rafale	3,700	9,525	The Rafale is nuclear-capable; although there is no evidence they will have nuclear roles. India intends a fleet size of at least 36 planes.

Table 1. Indian Nuclear Forces in 2016.(cont.)

Land-based Delivery Vehicles.

India's land-based ballistic missile portfolio attracts most of the public limelight. From hosting just three platforms in 1998—the Prithvi, Agni-I and Agni-II—limited in range to targets in Pakistan, today New Delhi is building the Agni-V, able to reach all targets in China, and working on the Agni-VI, intended to extend even further. To further pose a sign of robust intent against potential Chinese aggression, the Agni-V and Agni-VI are also being designed to host MIRV warheads, increasing their destructive capacity.

Executive responsibility for deciding and developing new missile platforms appears increasingly devolved to India's Defence Research and Development Organisation (DRDO), and the only limit to Indian missile aspirations at present appears to be at the level of technical knowledge. A former DRDO chief, remarking on potential limits to Indian missile development, stated that "DRDO does not wait for the threat to become a reality before it starts the development," and as such, it intends to "develop capabilities to meet futuristic threats."[3] This raises questions concerning the political governance of this missile program. While there are reports of a study group in the Indian National Security Council that makes recommendations to nuclear force structure, no upper ceiling appears to have been established for Indian missile range and destructive capability.[4]

Large, long-range ballistic missiles such as the Agni-V and Agni-VI obtain the greatest media attention, but there are substantive developments in short-range missiles that could also impact Indian security and relations with its neighbors. These include the Prahaar and Brahmos. The 150km-range Prahaar ballistic mis-

sile is intended to replace the Prithvi nuclear-capable missile. The potential nuclear mission of the Prahaar is presently unclear. With a warhead capacity of 200kg, the Prahaar is currently defined by DRDO as a purely conventional missile. The agency's reasoning for this classification is due to the fact that it has not yet mastered warhead miniaturization to smaller than 500kg, rather than political limitations against fielding tactical nuclear missiles.[5] However, another statement by the then head of DRDO, V.K. Saraswat, confirmed that the Prahaar can host "different types of warheads."[6]

Another Indian missile platform to be inducted as part of the Indian posture against China is the Brahmos. The Brahmos is a hypersonic cruise missile that was jointly designed with Russia, with a range of 290km. The ability of the Brahmos to host nuclear warheads is similarly ambiguous to that of the Prahaar, although a Russian official has stated that the missile is "capable of carrying a nuclear warhead."[7] The Indian Army plans to induct at least four Brahmos regiments, with at least one of these regiments to be stationed in Arunachal Pradesh as part of India's force posturing against China.[8] Three of these regiments each consists of 36 Brahmos Block-II missiles.[9] A fourth regiment will deploy a new variant of the Brahmos, the Block-III, designed with a steep-dive capability that can reach targets on the rear side of a mountain. As well as targeting adversary force concentrations and facilities, an Indian analyst has claimed that this variant is ideal for blocking mountain pathways.[10]

Indian missile developments are therefore reaching new heights of technical maturity. However, the Prithvi, Agni-I, and Agni-II are the only missiles that have actually been inducted. This illustrates that the full integration of the later Agni platforms into

India's nuclear force is still a future aspiration rather than a technical reality. The announcement of these platforms, as well as the Shourya and Prahaar, highlights the intentions of the Indian Government to field a diversified missile force. No sign of political limits to the eventual size, range, or destructive yield of this nuclear force is forthcoming, despite the fact that developments such as MIRV warheads begin to question the accuracy of CMD as a descriptive term for the direction in which the nuclear force is heading, and open questions as to possible Indian interest in a nuclear war-fighting capacity.

Air-based Delivery Vehicles.

The Indian Air Force serves as the oldest and most technically dependable leg of India's nuclear arsenal. A former chief of the Strategic Forces Command, remarking on the operational status of the nuclear force affirmed, "Today it is the air which would be the greater reliance factor as far as India is concerned."[11] This looks set to continue in the near term, as the two most likely nuclear-capable aircraft, the Mirage 2000H and Jaguar IS/IB undergo lifespan extension, while land-based missile induction proceeds at a slow place.

Mirage 2000H, Jaguar IS/IB, and MiG-27 aircraft are the most likely elements of the Indian Air Force to be presently assigned nuclear roles.[12] However, these will be joined by a new generation of jets, including the Sukhoi Su-30MKI and potentially the Dassault Rafale.

The Strategic Forces Command has ordered that 40 Su-30MKI aircraft be assigned for nuclear missions, and 40 Su-30MKIs are being modified to carry Brahmos missiles.[13] The Sukhoi features a maximum range

of 3,000km without refueling, and 8,000km with two refuelings.[14] India is also reportedly developing a variant of the potentially nuclear-capable Nirbhay missile to be fitted to certain Su-30MKI aircraft.[15] Su-30MKIs are being stationed near the de facto China border, at Tezpur and Chabua airbases in Assam state, close to the eastern Line of Actual Control (LAC) region and at Bareilly in Uttar Pradesh, near the central region.[16]

India also announced plans to purchase 36 French Rafale fighters in April 2015.[17] The Rafale is assigned to carry the Air-Sol Moyenne Portée (ASMP-A) nuclear cruise missile in the French Air Force.[18] As India continues to bolster its Air Force and general military presence along borders with Pakistan and China, this leg of the triad will continue to play a crucial role in Indian nuclear deterrence.

Sea-based Delivery Vehicles.

India's sea-based platforms, the least operationalized of the three triad legs, are still mainly theoretical. The *Arihant,* the flagship of India's indigenous SSBN fleet, is currently out for sea trials. Indian sailors are gaining operational knowledge of managing an SSBN through training on the Akula, a nuclear attack submarine lent by Russia. The Sagarika and K-4 seaborne missiles to be hosted on the *Arihant*-class SSBN fleet are still under development, and the highly limited range of the former suggests further work is needed before a satisfactory SSBN force is ready.

The Advanced Technology Vessel (ATV) is India's flagship project aimed at developing the third leg of the nuclear triad, as outlined in the draft nuclear doctrine issued in 1999. Under this project, a number of

S-class submarines will be developed in the next ten to twenty years.[19] The first vessel in this class—the S-2, popularly known as INS *Arihant* (destroyer of enemies)—was launched by Prime Minister Manmohan Singh on July 26, 2009.[20] The *Arihant* has four sea launched ballistic missile (SLBM) tubes. These can host up to 12 short-range ballistic missiles capable of hitting targets at a range of 500-1,000km, or four intermediate-range ballistic missiles with a range of 3,500-4,000km.[21]

DRDO is assigned responsibility for developing the delivery vehicles. The Sagarika short-range ballistic missile, codenamed K-15 and recently rechristened BO-5, has an effective range of 750km. After the November 2012 tests of the missile, DRDO claimed that the missile is almost ready for integration with INS *Arihant*.[22] Around 14 tests have been conducted between 1998 and January 2013.[23]

The K-4/K-X intermediate-range ballistic missile (IRBM), with a range of 3,500km, is also under development.[24] A further-reaching SLBM, the 5,000km-range K-5, is also reportedly being studied by DRDO. The K-4 borrows heavily from the technological lessons learned under the Agni project and is based on the design of Agni III.[25] However, it is uncertain if the K-4 is small enough to be hosted aboard the *Arihant* without substantial modifications, and it is more unlikely for the K-5. These missiles may therefore have to wait for the larger SSBN redesign that will only arrive with the S-5, the fourth boat in the *Arihant* class.[26]

A number of technical problems need to be overcome before an active and capable triad can be fielded. The first major technological hurdle is the successful integration of ballistic missiles with the SSBN.[27] Second is the operational success of the miniaturized

naval nuclear reactor under the duress of extensive sea operations. Third, the first few submarines, including INS *Arihant,* are unlikely to be major components of India's nuclear deterrent force. In fact, various authorities concerned with the project have characterized the commissioning of the INS *Arihant* as a technology demonstrator rather than a robust deterrent projector.[28]

Indeed, some commentators also doubt the performance of these initial vessels, given that they will belong to the first and second generation of SSBNs. As one analyst argues:

> It is only when the S-5 vessel with a new design and a powerful nuclear reactor is launched, which could be two decades away, can India hope to have a semblance of sea-based deterrence against China.[29]

Fourth, strategic analysts are concerned over the range of ballistic missiles for India's future SSBNs and consider it "grossly insufficient" for effective deterrence.[30] The limited range of K-15 or Sagarika is an issue as several analysts suggest, because the submarines would have to move close to enemy shores in order to fire these missiles for effective destruction of the opponent.[31] This would in turn make them extremely vulnerable to detection and ultimately destruction though anti-submarine warfare. Many are further concerned with the nuclear delivery capacity of the K-15 and missiles for the *Arihant*.[32] These concerns are mainly regarding the size of the nuclear warhead that could be delivered by these ballistic and cruise missiles, and whether India has sufficiently miniaturized warhead designs in order to successfully integrate them with these small missile platforms.

However, once these technical issues have been resolved, other questions remain about the eventual role of the *Arihant* in India's defense posture. Indian strategic discourse has suggested several potential missions for it, including demonstrating symbolic resolve against Chinese incursions in the Indian Ocean.[33] Greater political guidance is needed from the government as to the specific mission of the *Arihant*-class fleet in Indian defense, and for explicit recognition of its inherent limits as a last-resort nuclear backstop. This reflects the current issue in Indian nuclear force development of the growing lack of public correspondence between the trajectory of technical nuclear force development and the norms of restraint in the present nuclear doctrine.

Conclusion.

The growing diversity of India's delivery vehicles generates questions as to the continued correspondence of its nuclear posture with a concept of CMD, or whether a transition toward fielding war-fighting capabilities is taking place. Developments at the lower end of the spectrum, such as the potentially nuclear-capable Prahaar and Brahmos, threaten to blur the line between conventional and nuclear conflict for both India and potential adversaries. At the upper end of the spectrum, no range limit appears to have been set for the Agni series. A strategic defense review, including a reassessment of Indian nuclear policy, is required to clarify the Indian nuclear doctrine and posture in light of its changing delivery vehicle portfolio, and ensure India's nuclear force remains categorized as a last-resort option. The next section will look at the interactions of these nuclear force developments with those of India's two principal rivals, Pakistan and China.

INDIA'S NUCLEAR FORCE IN THE REGIONAL CONTEXT: PAKISTAN AND CHINA

The evolving nuclear doctrine and postures of Pakistan and China, as these interact with that of India, offer little optimism at present for greater stability in their strategic relations in the years to come. Two principal developments are of particular concern. First, there is a growing blurring of conventional and nuclear thresholds along the Line of Control (LoC) between India and Pakistan, and the LAC between India and China. India and Pakistan entertain different ideas about where their bilateral nuclear threshold should be, while the growing employment of conventional ballistic missiles by India and China threaten to obscure the line between conventional and nuclear conflict. Second, the coming extension of nuclear and strategic competition into the Indian Ocean, with little in the way of naval strategic dialogue to clarify intentions and build crisis avoidance and resolution mechanisms.

Pakistan.

Pakistan has recently faced three major crises with India: the 1999 Kargil War, the 2001-2002 massive twin military mobilizations following the December 2001 attack on the Indian Parliament, and the 2008 Mumbai attacks. The stimulus for each of these crises was an attack upon Indian forces or territory by a militant group operating from within Pakistan, aided covertly or overtly by Pakistan's defense establishment. This situation remains the most likely trigger to another bilateral crisis.

The Indian Army's "Cold Start" concept, first publicized in 2004, involves a rapid cross-border conventional attack to hold limited areas of Pakistani territory for bargaining leverage.[34] The frustration that drove the Indian Army to develop the Cold Start concept, and which overwhelms Indian television news during each crisis, is rooted in the inability of India to halt the activities of Pakistan-sponsored militant groups in a way that does not threaten major war with potentially nuclear consequences.

However, seen from Pakistan, Cold Start is the newest face of the continuing perceived Indian threat to invade and dismantle its sovereignty. While the concept has never been formally adopted by the Indian Armed Forces or supported by its political leadership as official doctrine, Pakistani official and semi-official statements regularly invoke Cold Start as a core reason for why Pakistan needs a nuclear force and to continue developing new delivery platforms.[35]

The arrival of the Nasr 60km-range nuclear missile, designed to target a substantial Indian conventional incursion into Pakistani territory, has brought the logic of Pakistan's posture to a stage where a nuclear response can be issued to virtually any conventional Indian operation. This thinking was defined by Pakistan's National Command Authority in September 2015, following a statement by a retired senior military nuclear official earlier in the year, as "full spectrum deterrence."[36]

While Pakistan attempts to lower the nuclear threshold to reduce India's room to conduct any purely conventional operations, the persisting interest in Cold Start-like options within India signifies an effort to raise the nuclear threshold to create such room.[37] Both states hold increasingly divergent views regard-

ing where the nuclear threshold is and should lie, a trend that will heighten their risk of misperception and miscalculation in planning responses to the next bilateral crisis.

However, India and Pakistan at least have substantial experience of ground operations against each other, including a military-to-military hotline regarding current border issues. This contrasts with the thrust of the nuclear force development of India and Pakistan into the Indian Ocean, a domain where they have comparatively less operational experience against each other.

Pakistan is now endeavoring to develop a naval nuclear capability. Pakistan established a naval strategic force command in 2012, creating the logistical base for assigning future operational nuclear forces to the navy in line with the already existing army and air force strategic force commands. Indeed, the importance of the naval dimension to Pakistan's nuclear future is clear from statements by serving and retired officials. The press statement announcing the naval strategic force command described it as "the custodian of the nation's second strike capability."[38] Elucidating this description, a former director of Pakistan's Strategic Plans Division, responsible for nuclear force development, has implied that Pakistan will not have a functioning second-strike capability until a naval nuclear force becomes operational. This is despite the greater numerical size of the Pakistani arsenal to that of India, and the ability of Pakistan's land-based missile force to reach all Indian targets with the forthcoming Shaheen-3 missile.[39]

Pakistan's existing submarine fleet, consisting of two Agosta-70 and three Agosta-90B submarines, are reaching the end of their lifespans.[40] In April 2015, Pakistani Prime Minister Nawaz Sharif approved

the purchase of eight diesel-electric submarines from China.[41] Pakistani and external analysts anticipate that these submarines will host nuclear cruise missiles in the future, with the possibility that China will quietly assist in modifications to mate the missiles to the submarines.[42]

A pattern in naval threat perceptions surfaces here that is similar to that of nuclear threat perceptions in the India-China-Pakistan triad. While India is concerned with the threat of China denying India Ocean access to important strategic and economic points, and directs much of its naval diplomacy and force posturing against this challenge, Pakistan is concerned about India applying similar anti-access tactics to blockade or severely limit its maritime future.[43]

The interest of Pakistan in addressing its aging submarine fleet as a key priority, and the likely prospect of the replacement boats being nuclear-capable, could support the "asymmetric escalation" posture of Pakistan's land-based and air-based nuclear forces. This posture of asymmetric escalation intends to advance a credible nuclear counterthreat against conventional or nuclear challenges to ensure escalation dominance at each level of conflict.[44] Given that Pakistan has difficulty matching most areas of Indian conventional naval strength, threatening nuclear escalation of a conventional naval standoff could help bridge this technology gap and limit Indian flexibility in this domain, as it has for the land and air vectors. Indeed, the limited range of the Babur cruise missile (350-750km), as the most likely nuclear missile to be carried aboard Pakistan's new submarine fleet, makes Indian conventional naval concentrations a suitable target.[45]

While Pakistan has no experience operating an SSBN, India does not have much more. India only

began sea trials of the INS *Arihant*, the first boat of its indigenous SSBN fleet, in 2014.[46] This limited operational experience, and the short range of the nuclear missiles to be mated with these boats, means that their patrols will likely not stray far from national littorals at first. This elevates the prospect of the boats and their protective convoys coming into contact with each other, in a bilateral maritime environment that is both tense and undefined in terms of boundaries to be defended.

Given that India and Pakistan have little experience of this kind of nuclear competition, contingencies will have to be resolved and learned from as they arise. The combination of the interaction between India's assured retaliation and Pakistan's asymmetric escalation postures, plus the challenges arising from the general naval competition described above, prompts several difficult questions: Will either state attempt naval area denial strategies in a nuclear environment? In line with Pakistan's asymmetric escalation posture, will it issue nuclear threats and signals to unwelcome Indian conventional naval incursions? Finally, Pakistan's general naval plans are partly driven by the need to create more territorial strategic depth; the same ambition that drives its longstanding interest in influencing events and creating friendly grounds in Afghanistan.[47] If Pakistan attempts to expand the patrol routes and general aegis of its naval projection, how will India respond to this?

India's nuclear forces already hold the range and destructive capacity to target Pakistani territory. The persistence of the Indian debate on Cold Start-like options reflects that Indian strategic analysts have greater confidence in India's nuclear capabilities than in the adequacy of India's nuclear doctrine to deter Pakistan.

This tendency is reversed in Indian strategic perceptions of its other major rival, China. There is greater confidence (though not universal) in the suitability of India's nuclear doctrine for deterring China than in India's nuclear force capabilities.

China.

With conventional superiority over Pakistan, much of India's nuclear planning today is directed toward China. India's most recent missile, the Agni-V, has been developed with Chinese east coast targets in mind.[48] India's emerging *Arihant*-class SSBN fleet is designed to ensure second-strike capacity, but is also often spoken about in India as an additional signal of general naval resolve against Chinese conventional projection into the Indian Ocean.[49]

China has a deep-seated interest in conventionally armed ballistic and cruise missiles. A recent assessment estimates that the Second Artillery Force, the corps of China's military charged with the operation of nuclear forces, possesses around seven times the number of conventional ballistic and cruise missiles as nuclear missiles.[50] This generates ambiguity around the threshold between conventional and nuclear use, and renders it more difficult for adversary forces to determine the true mission of an incoming missile until the moment of impact.

Indian defense planners and strategic analysts are concerned with a perceived growing asymmetry between Indian and Chinese conventional capabilities. While China is not stationing new forces along the India border, it is improving transport links to the border from existing military bases in China's interior and alongside the border. Former Indian Defense Minister

A.K. Antony assessed in 2011 that these efforts had included construction of a 58,000-km road system and development of five airfields.[51]

The Indian Government is raising new conventional forces to meet this challenge. Two new Indian Army divisions—the 56 and 71 Mountain Divisions—encompassing around 35,000 troops, are being raised in Arunachal Pradesh. The divisions are equipped with T-90 tanks, normally used for penetrating assault, and artillery.[52] A more ambitious plan is the creation of a Mountain Strike Corps, originally designed with a total manpower strength of around 90,000. Consisting of three Indian Army divisions, this new 17 Corps would be the first such unit designed specifically to launch major strike missions into Chinese territory.[53]

However, these conventional force development programs are being hindered by continuing dysfunctions within the Indian defense policymaking system.[54] The Indian Government has allocated 61 new planned roads along the China border, totaling 3,410km, for construction by its Border Roads Organization. As of May 2015, only 19 of these roads had been completed.[55] Meanwhile, progress in raising the Mountain Strike Corps has been hindered by insufficient funding. These difficulties forced Defense Minister Manohar Parrikar to reduce the planned strength of the corps to 35,000 soldiers in April 2015. It is uncertain as of mid-2015 if even this reduced corps will be ready by the targeted deadline of 2021-2022.[56]

Thus, there are continuing doubts within India regarding the strength of its conventional deterrence against China. A senior Indian Army planner has predicted that the corps "will be yet another immobile, inadequately equipped formation."[57] However, despite these difficulties, it is important to note the under-

lying intention to field credible capabilities for striking into Chinese territory. This intention extends to commissioning new and potentially nuclear-capable platforms. Combined with these perceived shortcomings of India's conventional deterrence, these plans could lead to a growing emphasis on nuclear weapons in India's approach to the border.

The China challenge is generating a blurring between conventional and nuclear platforms and missions within India's strategic planning and thinking. This issue will be magnified by India's commissioning of its own forward strike platforms. Several of these platforms are nuclear-capable or reportedly so, including the Prahaar, Brahmos, and Su-30MKI multirole fighter.

The Prahaar is being commissioned by the Indian Army. The Army will also induct at least four Brahmos regiments, with at least one of these regiments to be stationed in Arunachal Pradesh. A new variant of the Brahmos, the Block-III, is designed with a steep-dive capability that can reach targets on the rear side of a mountain. The Block-III is intended for induction into the Mountain Strike Corps.[58] Sukhois are being stationed at the Tezpur and Chabua airbases in Assam state, close to the eastern LAC region, and at Bareilly in Uttar Pradesh, near the central region.[59]

The intention of Indian defense planners to strike as far as possible into China, which underpins the development of these missile platforms alongside further-reaching vehicles such as the Agni-V, further creates issues for escalation control. With escalatory pressures likely to beset both India and China early in a conflict as both sides seek dominance through further-reaching strike platforms, where are the vertical limiting points that will mark mutually recognized

barriers between small and major conventional conflict, or between conventional and nuclear conflict?[60]

Indeed, a retired Indian Army officer has argued that the army must:

> build in suitable 'exit points' in the unfolding of its operation, such as prior to launch of pivot corps offensive resources, prior to launch of strike corps, prior to break out of enemy operational depth and prior to developing a threat to terminal objectives . . .[61]

Indian conventional force commanders also reportedly categorize all adversary stationary or mobile missile launchers as "legitimate targets" regardless of their potential nuclear missions, and do not feel obliged to seek prior political authorization to strike these targets.[62] An Indian attack on Chinese nuclear facilities or units, whether Indian forces originally intended to strike a specifically nuclear target or not, could escalate dangerously and further cloud the position of both states on the conventional-nuclear threshold.

Similarly, a rapidly-changing domain of Sino-Indian strategic competition is in the maritime sphere. China has held a long-standing technical and political interest in fielding an SSBN fleet. A recent analysis of Chinese naval discourse found a recurring perception of developing an SSBN fleet as a core long-term objective of the People's Liberation Army (PLA) Navy, and an essential element of naval projection in more general terms.[63] A new fleet of Jin-class SSBNs are presently entering service. Up to five Jin-class boats are planned, and a 2015 Pentagon report predicts that the first of these will begin deterrent patrols in 2016.[64]

These developments have an impact in Indian security discourse that echoes the fear of naval blockade with which Indian maritime expansion is greeted in

Pakistani discourse. The "string of pearls" concept, first pioneered by an American defense contracting firm, has become a principal frame by which Indian analysts view Chinese maritime nuclear and conventional projection.[65]

While the realities of such Chinese intentions are disputed, this fear of Chinese nuclear and naval projection has an effect on Indian perceptions on the role of the *Arihant*. While India's nuclear doctrine refers to the triad of land, air, and sea-launched nuclear forces as fulfilling a second-strike posture guided by an NFU policy, Indian naval and nuclear discourse has a frequent tendency to suggest that the *Arihant* can serve an additional role and deter general Chinese naval projection. This is despite the fact that the *Arihant* is technically designed and politically intended to serve only as a last-resort deterrent, and is not suited to be the spear of a blockade-breaking Indian conventional naval offensive.

The Pakistan-China Strategic Partnership.

Further complicating the regional picture for New Delhi is the fact that Islamabad and Beijing, while posing two idiosyncratic security challenges to India, have an extensive record of economic and defense cooperation targeted at complicating India's rise. While the two states do not always act in lockstep in every aspect of their anti-India defense planning and operations, they still share a multifaceted and strengthening strategic partnership. This has included substantive nuclear proliferation and ambitious infrastructure and defense projects. The regional strategic picture cannot be completed without an analysis of the effects of this partnership.

Pakistan's military and civilian nuclear programs have long benefited from Chinese technological and economic assistance. A U.S. intelligence report in the late 1990s attested that China was the "principal supplier" for Pakistan's military nuclear program.[66] Past Chinese military nuclear assistance to Pakistan has reportedly encompassed transfers of uranium hexafluoride gas intended for weapons-grade uranium production; weapons-grade uranium itself; a nuclear weapon design; complete M-11 short-range ballistic missiles; and missile components. A 2011 U.S. intelligence report to Congress stated that "entities" within China were still engaged in proliferating "a variety of missile-related items" to Pakistan.[67]

China has also invested in Pakistan's civil nuclear energy program. Recent developments have included the construction of the Chasma-2 reactor (operational since 2011) and the Chasma-3 and Chasma-4 reactors (under construction since 2011). These reactor projects have been supported by significant Chinese financing. China is also engaged with Pakistan in building two reactors near Karachi, providing 82% of the projects' financing. There are further reports of China studying a potential fifth Chasma reactor.[68] Given that the Nuclear Suppliers Group (NSG) practices an embargo on nuclear technology transfers to Pakistan, the Chasma-3 and Chasma-4 contracts have been criticized by Washington as "inconsistent" with China's membership in the NSG.[69]

Islamabad and Beijing are engaged in several other economic and defense initiatives. Beijing committed $46 billion toward establishing a "China-Pakistan Economic Corridor" in April 2015, which focuses primarily upon infrastructure and energy projects in Pakistan. A key objective of the project is to develop

infrastructure for transporting oil and gas from the Gwadar port in Pakistan to Kashgar in the Xinjiang region of China.[70] The sheer scale of this funding devoted to Pakistan underlines the depth of Chinese commitment to the strategic partnership.

Other recent initiatives include the aforementioned Pakistani submarine deal with China, as well as Pakistan's commitment to use China's Beidou satellite navigation system and allow China to build a Beidou facility in Pakistan.[71] Indeed, the strategic partnership appears to be hardening. Younger Chinese South Asia experts tend to support a robust relationship with Pakistan, with one expert noting that their enthusiasm for deepening the strategic partnership contrasts with their older peers, who tend to argue for "balance" toward India and Pakistan.[72]

The hardening Pakistan-China strategic partnership has implications for India and for U.S. regional interests. In the context of an absence of trilateral strategic dialogue, these developments—including the apparent continuing Chinese missile technology proliferation to Pakistan—could potentially escalate Indian conventional and nuclear threat perceptions and thus form another driver of regional strategic instability.

Also, similar to the tendency of U.S. diplomats and defense planners to view the strategic partnership with India in terms of how it can be directed to complicate the rise of China in the Asia-Pacific, their Indian counterparts may increasingly view the U.S. strategic partnership in terms of how it can be directed at undermining this strengthening China-Pakistan relationship. For example, a retired Indian foreign secretary, remarking on the implications of the recent proposed Chinese reactor sales to Pakistan, has argued:

> Our strategic partnership with the US will lose meaning if the US once again overlooks nuclear cooperation between our two adversaries avowedly intended to counter the strategic advantage India has ostensibly obtained through the India-US deal.[73]

The importance to future regional stability of the changing China-Pakistan strategic relationship, India's responses to it, and the question of the degree to which the United States will become involved in politically or technologically assisting such Indian responses, should therefore not be overlooked.

Conclusion.

The task of managing stable nuclear relations within the India-China-Pakistan triad will therefore face several challenges in the coming years, as all three states integrate new nuclear platforms into their force posture and respond to those of the others. These challenges can be grouped into two main categories: the growing ambiguity between conventional and nuclear missiles and missions; and the prospect of naval nuclear competition amidst the high priority each state attaches to fielding a viable nuclear-armed deterrent and ensuring substantial freedom of movement for its naval projection in an increasingly congested Indian Ocean.

The absence of substantive bilateral or trilateral strategic dialogue on these topics amplifies these challenges. This lack of dialogue limits opportunities for each state to gain a clear understanding of the nuclear intentions of the others, in order to construct risk reduction and crisis management mechanisms and to develop clear-sighted strategic planning based upon

these inputs. A senior Indian official has highlighted the importance of this objective in strategic relations with China:

> With China, there is scope for working together on the particular aspect of reducing salience of nuclear weapons. They have a no-first-use posture, so do we. So that creates a commonality…So at some stage I see us following from that, with let's say a detargeting arrangement so we don't target each other with weapons, and some kind of confidence-building dialog.[74]

Without efforts in this direction in such a fluid environment, the risk of misperception or miscalculation affecting the crisis decision-making of India, Pakistan and China will likely increase. The next section will examine the nuclear doctrinal debate within India as it processes these changing strategic developments.

INDIAN NUCLEAR DOCTRINAL DEVELOPMENTS

India's nuclear doctrine has not been publicly revised since 2003. However, there is a growing debate within India regarding the continued suitability of its two main principles—NFU and massive retaliation—for the strategic challenges India faces.[75] This section will outline the history of India's nuclear doctrinal development since 1998 and survey the current debate on future doctrinal approaches. While there are no signs at the time of this writing that the doctrine will be officially revised in the near future, doubts regarding the validity of the current doctrine and calls for a more flexible nuclear approach persist within India. A new doctrine should be developed; however, it should be part of a wider strategic defense review that clari-

fies the comparative roles of conventional and nuclear forces in Indian defense, and reiterates the latter as a last-resort option for national survival.

Indian Nuclear Doctrine, 1998-2003.

Following its nuclear tests conducted in May 1998, India decided upon a doctrine described as "credible minimum deterrence."[76] However, as Rajesh Rajagopalan has argued, CMD is more of a statement of nuclear force posture rather than of doctrine.[77] "Force posture" defines the structure of nuclear forces, while "doctrine," or the ideological component of nuclear policy, defines the set of conditions under which nuclear weapons shall be used.[78]

India's doctrine consists of three broad principles. First, at the declaratory level, India has articulated a vision where nuclear weapons are "more an instrument of politics rather than a military instrument of war-fighting."[79] In fact, India had abjured the idea of nuclear war fighting from the very beginning. Potential nuclear strategies can include: offensive disarming of the adversary through "bolt from the blue" nuclear strikes; defensively denying an enemy a conventional battlefield advantage it enjoys through demonstration shots or use of tactical nuclear weapons (TNWs); or simply using the threat of assured retaliation through nuclear weapons to deter an adversary from using nuclear weapons to blackmail or coerce the defendant. India's avowed doctrine has squarely rested with the third option.[80]

Second, India adheres to a policy of no-first-use (NFU) of nuclear weapons.[81] For Indian decision-makers, for both political and military reasons, NFU has appeared to be a risk worth taking. NFU comported well with India's overall nuclear philosophy that nuclear weapons could never be used in the battlefield. Since nuclear weapons were only for deterrence, any first use was out of the question. This policy also radiated the image of a responsible and restrained nuclear power.

The third important aspect of the ideological component of New Delhi's nuclear deterrence was therefore centered on India's responses to the threat of use of nuclear weapons by its adversaries or actual use of nuclear weapons in case deterrence breaks down.[82] India's nuclear doctrine maintains an assured retaliation posture.[83] The posture of assured retaliation is based on the premise that deterrence works on the logic of punishment: The threat of retaliation maintains deterrence. An assured retaliation strategy does not entail an immediate response to the use of nuclear weapons by the adversary.

In the period between the 1998 tests and the declaration of India's official nuclear doctrine on January 4, 2003, the definitions of NFU and the posture of assured retaliation underwent some shifts.[84] From a strict NFU policy in 1999, India had by 2003 conditioned its NFU pledge by declaring that it may retain the right to respond with nuclear weapons in case its territory or its armed forces anywhere in the world were attacked by chemical or biological weapons.[85] On the issue of quantum of punishment, India's retaliatory strategy moved toward a more muscular approach. The volume of retaliation took an ascendant trajectory, from "adequate response" in December 1998,[86] to "punitive

retaliation" in August 1999,[87] and finally to "massive retaliation" in January 2003.[88] However, there have been no further official revisions since then, and Indian analysts argue that both NFU and assured retaliation continue to define India's nuclear doctrine.

The Current Doctrinal Firmament.

In the recent past, four developments in India's external and internal environments have started a process of doubt and debate around India's nuclear doctrine. First, Indian nuclear and conventional strategies have not been able to adequately answer the challenge of Pakistani-sponsored sub-conventional warfare in the subcontinent.[89] Second, the increasing volume and sophistication of Pakistan's nuclear arsenal, and especially its development of TNWs, have created doubts in Indian strategic circles regarding the credibility of New Delhi's nuclear deterrent.[90] Third, Chinese nuclear force modernization has also generated additional pressure on India's nuclear forces, increasing the perceived deterrence gap between the two.[91]

Lastly, India's own growing strategic capabilities, as outlined in the previous sections, are challenging the doctrine. Demonstrations of technological capability have further been accompanied with doctrinal statements by senior defense scientists that are not in strict conformity with India's avowed nuclear doctrine.[92] All these factors—the increasing lethality and range of Pakistan's arsenal, India's inability to resolve the Pakistani conventional-nuclear dilemma, China's nuclear modernization, and the growing sophistication of India's nuclear capabilities—have ignited a domestic debate in India over the need to revise the doctrine.

The fear of Pakistan's increasing nuclear arsenal led Jaswant Singh—India's former External Affairs and Defense Minister—to stir a doctrinal debate in the Indian Parliament in March 2011.[93] Calling upon the government to revisit India's nuclear doctrine, he argued that the:

> policy framework that the NDA (National Democratic Alliance) devised in 1998 is very greatly in need of revision because the situation that warranted the enunciation of the policy of 'no-first-use' or 'non-use against non-nuclear weapons,' 'credible deterrence with minimum force,' etc. has long been overtaken by events.[94]

Rather than continuing with "yesterday's policy," the need was to address the current problems confronting India.

Former commanders of the Strategic Nuclear Forces (SFC) have also joined this debate.[95] In an article written for *Force* magazine in June 2014, Lt. Gen. B.S. Nagal argued that it is time for "a dispassionate and critical evaluation of the [nuclear] doctrine."[96] Just like Jaswant Singh, Nagal attacked some of the fundamental premises of Indian nuclear doctrine—NFU and massive retaliation—claiming that even when such ideas made sense in the post-1998 period, the changes in the strategic environment necessitate a review of the doctrine.

Civilian strategic analysts have also joined this chorus of voices. As P.R. Chari, a noted strategic thinker and former head of the Ministry of Defence think tank Institute of Defence Studies and Analyses argued, shifts in India's strategic environment have provided "valid ground to revisit India's nuclear doctrine."[97] Such doctrinal discourse was given a push in

April 2014 when the then national opposition party, the Bharatiya Janata Party (BJP), suggested in its manifesto that it would "revise and update" India's nuclear doctrine.[98]

The two most important points of the current discussion around the nuclear doctrine are India's NFU pledge and its policy of massive retaliation. These precepts were fundamental to India's nuclear thinking when the doctrinal plans were first conceived in the post-1998 period. In the current strategic churning over nuclear doctrine, they are also the most debated.

The NFU Debate.

The idea that the NFU policy has assisted India in projecting itself as a responsible and restrained nuclear power is accepted by most Indian analysts.[99] Being essentially defensive, the NFU policy has helped in "reassuring globally that India is not an aggressive power."[100] Tangible benefits have also accompanied this general acceptance of India's responsible nuclear behavior by the international community, most evident in the civil nuclear cooperation agreement with the United States. In some sense, India's accommodation into the global nuclear order was facilitated by such nuclear restraint.

However, as critics now argue, the challenges posed by the evolving strategic situation far outweigh the soft power benefits accrued by the "passivity" of the NFU pledge.[101] First, an NFU pledge allows the adversary to carry out "large scale destruction" even before a massive retaliation can be launched against it.[102] In the early years of the subcontinent's nuclearization, the destructive potential of Pakistani strategic assets was curtailed by the range of its ballistic missiles and

its limited nuclear arsenal. Today, Pakistan claims the ability to target not only the whole of continental India, but also far off islands in the Andaman Sea. Pakistan's nuclear arsenal is one of fastest developing in the world. In the words of a former SFC commander, imperiling the populace through an NFU pledge is extremely undemocratic, especially when the "Indian public is not in sync with the government's policy and the nation is not psychologically prepared."[103]

Second, even when Pakistan has not professed a first strike (pre-emptive strike) option but has only declared a first use option (defensive use of nuclear weapons in the battlefield), decision-makers in New Delhi cannot guarantee that in the fog of war, such distinctions would remain intact: "[I]f an adversary is to initiate a nuclear war then it must be such that it concludes on its own terms."[104] The nature of Pakistan's TNW deployment adds fire to this uncertainty; under the threat of the "use them or lose them" scenario in case of a Indian armored assault on the international border, Islamabad may be tempted to avail its battlefield nuclear forces and launch an all-out nuclear attack against India. Indeed, under the Indian nuclear doctrine, even adversary use of TNWs would be met with a massive Indian response leading to unacceptable damage.

Third, an NFU policy also restricts India's military options; it cannot attrite the enemy's strategic assets through selective counter-strike targeting of its nuclear forces.[105] As Chari argues, "Pakistan is sure that India will not target its TNW's with its own nuclear missiles."[106] There is also a moral argument against the NFU policy: To deliberately constrain India's military options is both strategically dangerous, because it gives the advantage of initiative to the enemy, and is also "morally wrong" because "the leadership has no

right to place its population at peril without exhausting other options and only opting for the NFU."[107]

Fourth, pre-emption of Pakistan's use of TNWs is gaining ground among those who advocate a first use policy; a prominent Indian think tank has even justified first use in case Indian decision-makers acquire credible information on Pakistan preparing for a nuclear attack.[108] Such pre-emption may not be necessarily through nuclear weapons. An ex-SFC commander has argued that India should look forward to employing "select conventional hardware that tracks and targets nuclear forces," because answers to the strategic situation in the subcontinent "lay not just in the promise of disproportionate retaliation, but also in the credible ability to pre-empt and counter its use."[109]

Fifth, the NFU policy has hardly helped to reduce the trust deficit with Pakistan. Instead, it has only bolstered Pakistan's urge to support terrorism against India, as the former is sure that India will not resort to nuclear use against Islamabad's subversive activities.[110] As one expert argues:

> this policy [NFU] articulation frees Pakistan of the uncertainty and angst that India might contemplate the pre-emptive use of nuclear weapons to deal with terrorist attacks or limited conventional strikes by Pakistan.[111]

Though other concerns regarding the credibility of nuclear first use against chemical and biological weapons are also often aired in the Indian debate,[112] the aforementioned arguments form the most common and strategically informed case for revocation of the NFU policy.

What the critics have advocated for is adopting a new form of ambiguity around India's nuclear use

policy. Maintaining such ambiguity would give India more options for the government to decide at its discretion, such as pre-emption; launch on warning; launch on launch; or NFU.[113] It would also certainly undermine the current comfort that Pakistan has with India's existing NFU policy.

However, such a move would likely bring several political and strategic costs for India. Adopting a more assertive nuclear approach toward Pakistan would only escalate its India threat perceptions and commensurate conventional and nuclear developments and positioning along its borders with India. This response could also be seen from China.

More broadly, ending the NFU policy could significantly damage India's long-sought international image as a "responsible nuclear power." This image is a major foundation upon which India's strategic relationship with the United States; its success in obtaining a waiver from NSG sanctions; and prospective permanent membership in the United Nations Security Council (UNSC) and NSG have all been built. A retired Indian Army officer and nuclear expert commented that the present American official perception of India as a responsible nuclear power has been achieved through Indian nuclear policies such as:

> the doctrine, the lack of rhetoric, no threats being held out to countries like Pakistan, credible minimum deterrence, no-first-use, no move towards tactical nuclear weapons.[114]

These substantial costs would have to be weighed against the above benefits of nuclear flexibility to be gained from ending India's NFU policy.

Massive Retaliation.

In the official pronouncement of the nuclear doctrine in 2003, India postulated its retaliatory posture as one of massive retaliation. This was a shift away from the 1999 draft nuclear doctrine, which had depicted India's retaliatory posture as one of punitive retaliation. Jaswant Singh later termed this a posture of assured retaliation.[115] The shift was palpable because massive retaliation translated into certainty of an ultimate response carrying the entire weight of India's nuclear arsenal; punitive or assured retaliation, on the other hand, had some inbuilt flexibility when it came to the quantum of punishment India would direct toward an adversary for having used nuclear weapons first.

Critics now argue that the "unrealistic certitude" of massive response suffers from huge credibility problems.[116] A retired senior Indian naval officer and nuclear expert argued, "massive retaliation was a discredited doctrine even during the Cold War."[117] The most likely use of nuclear weapons in South Asia pertains to the scenario of Pakistan availing its TNWs against Indian Armed Forces. Such low-level nuclear use, even when deemed as first use of nuclear weapons, cannot believably invite massive retaliation from India; as analysts note, it "defies logic to threaten an adversary with nuclear annihilation to deter use of TNWs."[118]

An additional but related issue with the doctrine of massive retaliation is the issue of proportionality of the use of force. To threaten extinction of an enemy, which is inherent in the policy of massive retaliation against low yield, local use of battlefield nuclear weapons goes against the logic of proportionality of

response.[119] Beyond the credibility-proportionality dilemma, Pakistan's vast nuclear assets likely could not be fully eliminated, even after a massive strike. This could invite a similar all-out Pakistani nuclear attack upon India. It thus smacks of irrationality for India to invite unacceptable damage upon itself in response to adversary use of TNWs.[120] It is also, as some argue, immoral to endanger one's populace with counter-annihilation.[121]

However, most important is the issue of political will: Would Indian decision-makers be ready to walk the talk in case the adversary resorts to nuclear first use? The issue of political resolve is particularly problematic for a policy of massive retaliation, because most critics believe that the Indian political class is highly risk-averse. Increasingly, the strategic community is growing skeptical of whether "when it comes to the nuclear issue, the political class will have sufficient gumption to ensure assured retaliation."[122] This averseness to political risk was manifest in India's response to crisis situations in the past, whether it was the Kargil War, the Parliament attack and military mobilization crisis of 2001-2002, or the more recent Mumbai attacks.[123]

Given these problems with the doctrine of massive retaliation, skeptics have argued for a number of other options. The common thinking behind these options, as described by one analyst, is to "settle for less than punishing Pakistan 'massively' for its temerity to use nukes first."[124] India's response to the breakdown of deterrence must not be informed by objectives of "revenge seeking" and "venting rage" as they "have no place in the decision matrix."[125] Using logic first propounded by former Indian Chief of Army Staff, K. Sundarji, the idea is to terminate nuclear hostili-

ties at the lowest level possible through direct political intervention. Therefore, the need is to dilute the quantum of punishment in the doctrine to the earlier posture of punitive retaliation. This may provide the Indian decision-makers the much-needed flexibility to deal with Pakistan's low-level use of TNWs. If flexibility of response is the solution to various problems arising out of the massive retaliation doctrine, some have argued that "how India should retaliate to a nuclear first strike" must be left to the "discretion of the Prime Minister."[126] However, even critics of massive retaliation admit that adopting a more flexible retaliatory doctrine at this stage may send the wrong signals to Pakistan and other adversaries.[127] India is, therefore, caught between a rock and a hard place when it comes to its retaliatory posture.

The Government Response: Staying the Course.

The responses from the current BJP government (2014-present) and the previous United Progressive Alliance (UPA) government (2004-2014) to the above arguments have been to reinforce India's existing nuclear doctrine. Just a day after Jaswant Singh raised doubts on India's nuclear doctrine in parliament, the government quickly responded to his criticisms. A government statement held that there was "no change" in India's nuclear doctrine, and that as far as "Pakistan's increasing nuclear arsenal" was concerned, the Indian Government was taking "effective steps to safeguard India's security and defense interests consistent with our doctrine of credible minimum nuclear deterrent."[128]

Ambassador Shyam Saran also gave a substantial speech on India's nuclear doctrine in April 2013.[129]

Though he claimed to have spoken in an individual capacity, the speech is nevertheless widely viewed within India as explaining official views.[130] Saran was then the head of the Indian National Security Advisory Board (NSAB), held various prestigious appointments in the UPA government, and was considered close to the ruling elite. A noted strategic columnist observed that "Saran was placing on record India's official nuclear posture with the full concurrence of the highest levels of nuclear policymakers in New Delhi." [131]

This impression was further validated because Saran tried to rebut many of the domestic criticisms that had enveloped India's nuclear doctrine in the last few years, especially regarding the strategic problem posed by Pakistan's TNWs and doubts around the credibility of India's massive retaliation posture. Emphasizing "India's continued insistence on the central tenet of its nuclear doctrine," Saran argued that irrespective of the development of TNWs by Pakistan, India recognizes no such labels on nuclear weapons.[132] All nuclear use in the subcontinent would be strategic because any nuclear use by Pakistan—TNWs or otherwise—would be approved at the highest level of political decision-making. India's response, Saran underlined, "if it is attacked with such weapons," would be "massive and designed to inflict unacceptable damage on the adversary."[133]

At present, the government does not appear to harbor any plans for revision of the doctrine. Despite the inclusion of the pledge to revise and update the doctrine in the BJP 2014 electoral manifesto, Prime Minister candidate Narendra Modi moved to rule out any change to the NFU policy soon after the manifesto was released. Modi presented the NFU policy and the larger Indian nuclear doctrine as a broader expression

of the legacy of former Prime Minister A.B. Vajpayee, as well as being symbolic of Indian cultural values dating back to Gandhi and Buddha.[134]

After becoming Prime Minister, Modi repeated his earlier pledge of continuing with India's existing nuclear doctrine. When questioned by Japanese journalists in August 2014 regarding the BJP election manifesto promise of changing the doctrine, he argued:

> While every government naturally takes into account the latest assessment of strategic scenarios and makes adjustments as necessary, there is a tradition of national consensus and continuity on such issues. I can tell you that currently, we are not taking any initiative for a review of our nuclear doctrine.[135]

The strength of official conservativism regarding the Indian nuclear doctrine is further demonstrated by the BJP ignoring calls by its influential Hindu nationalist ideological partner, the Rashtriya Swayamsevak Sangh (RSS), to revise the doctrine.[136]

The remarkable continuity, which underlines India's doctrinal journey since it first tested nuclear weapons in May 1998, is indeed perplexing. More so because the doctrine has tolerated the pressure of the changing security environment, organizational impulses within the military, technological sophistication of its arsenal, growing discontent among the strategic elites on the existing doctrine, and the change of government at the center. In fact, three different prime ministers have affirmed the same doctrinal principles over a period of 18 years. Some changes did accompany India's nuclear doctrine, as was the case in dilution of the NFU pledge and shift from punitive retaliation to massive retaliation in 2003. However, the main tenets of the philosophy underlying India's

nuclear doctrine have remained the same. These are: first, that nuclear weapons are political instruments to deter nuclear blackmail or the use of nuclear weapons rather than tools of warfighting; second, that India's national interests are best served by an NFU policy; and finally that India would adopt a purely retaliatory nuclear strategy even when it may suffer heavily from first use of nuclear weapons against it.

Though it is hard to pinpoint precisely the reasons behind such continuity, it is evident in the arguments presented by the votaries of the current nuclear doctrine that changes in the NFU policy and massive retaliation may not help in answering the problems that currently confront New Delhi. Inserting purposeful ambiguity into India's nuclear use policy may drive India toward an arms race, and would also force a more ready nuclear arsenal entailing hair trigger alerts and launch-on-warning postures, a scenario, which does not brook much favor among India's political class.[137] Moving away from an assured retaliation posture to graduated use would also entail nuclear warfighting—a futile exercise. As one retired diplomat has argued, "controlled nuclear war between India and Pakistan is impossible."[138] This would also lead to a fundamental reorientation in India's views on nuclear weapons from being political tools for ensuring deterrence to military instruments of warfighting.[139] However, one of the most important yet undermentioned factor is that many in India continue to view its nuclear doctrine as a statement of its unique nuclear philosophy: one that underlines responsibility and restraint as the basic guiding principles not only of its nuclear behavior but also its historical world view.[140] This has also helped India to make inroads into the global nuclear regime evident by its unique status "as a responsible

state with advanced nuclear technology"—as close to the status of a recognized nuclear weapons state (NWS) under the Nonproliferation Treaty (NPT) as a non-NPT member can get; it has achieved this through the Indo-U.S. nuclear deal.[141] The doctrine therefore is not just a military statement; it is also a pitch for Indian foreign policy. Nuclear weapons "impose immense responsibility and demand prudence and sobriety in how we conduct ourselves in the community of nations."[142]

Conclusion.

While it appears that doctrinal revision in the near future is unlikely, this does not alleviate the concerns by strategic experts within India regarding its credibility to deter the changing threats posed by Pakistan and China. Many of these threats, as outlined in the previous section, focus on deterring sub-conventional warfare or navigating a growing blurring of conventional and nuclear thresholds. The presence of these sub-conventional and conventional challenges in the Indian nuclear debate highlights the need for India to conduct a public strategic defense review that clearly structures the spectrum of threats that India faces and the specific role of conventional or nuclear forces toward each threat. Such an exercise would include a reexamination of India's nuclear doctrine, highlight that nuclear weapons are retained solely as a last resort option to prevent national annihilation, and assign stronger conventional forces to meet other challenges. The strategic debate on the quantum of retaliation an adversary can expect from India—whether massive or punitive—could also be addressed through this process.

The full implications of these developments for U.S. interests will be analyzed in a later section. The

next section will explore India's global nonproliferation and disarmament approaches, an important element of its diplomacy as a rising power.

INDIAN NONPROLIFERATION AND DISARMAMENT APPROACHES

In the past, India's approach toward the global nonproliferation and disarmament policy agenda has emphasized its support for its root objectives: To limit the spread of nuclear weapons and reduce their salience in state defense policies toward eventual disarmament. However, India has traditionally combined this support with a robust critique of principal international structures through which these objectives are sought, especially the NPT and Comprehensive Test Ban Treaty (CTBT). India's formal prohibitive objection to the NPT as instituting an arbitrary and discriminatory system of legitimate and illegitimate nuclear weapons possessors remains.[143] India's traditional criticism of the CTBT as containing inadequate disarmament commitments also stands, although a senior Indian official has commented that:

> if we were to have a situation where the US would ratify the treaty, if China would ratify the treaty, then that would be a different situation that we would have to look at.[144]

India also advocates a global NFU agreement, while pursuing a stricter disarmament policy than the United States, urging international agreement of a time-bound global disarmament commitment.[145]

However, outside these remaining disputes, there has been a growing convergence of United States and

Indian nonproliferation policy since 1998. India and the United States both: support a Fissile Material Cut-off Treaty based upon banning future fissile material production; favor practice of a voluntary testing moratorium; call for North Korean nuclear disarmament; and advocate for a negotiated peaceful solution to the issues raised by Iran's nuclear program.

This section will focus on two recent sources of difficulty in U.S.-India relations regarding nonproliferation policy. These are the varying levels of commitment by the United States and India to preventing an Iranian bomb, and the continuing challenge of securing Indian membership in the NSG. Analyzing these topics will highlight lessons for managing the bilateral strategic relationship.

The Iranian Nuclear Issue.

The United States, with little post-1979 political or economic connections with Iran, has recently viewed its engagement with Tehran mainly through the prism of resolving the nuclear issue. Washington has consistently pressed New Delhi to support and implement strong political and economic sanctions against Tehran. However, while Washington has very few other interests (such as mutual interest in a stable Afghanistan) in its strategic relationship with Tehran, this is not the case for India-Iran relations.

For India, Iran is a necessary hydrocarbon source; a crucial and like-minded partner in stabilizing Afghanistan; a fellow member of the Non-Aligned Movement; and, in the words of a former Indian Minister of External Affairs, a "gateway for India to Central Asia" and India's energy and security interests in that broader region.[146] India therefore has far greater

comparative strategic and economic investments than the United States in their overall relationships with Iran. This prohibits adopting a single-issue diplomatic approach, as the United States has largely done.

Since the revelation by Iranian dissidents of the concealed Iranian Natanz uranium enrichment and Arak heavy water reactor facilities in August 2002, and subsequent demands by the United States, International Atomic Energy Agency (IAEA) and other states that Iran remove the resultant concerns surrounding its nuclear intentions, India has adopted a stance focused upon "safeguarding its interest in preserving ties with both Washington and Tehran."[147] This entails rhetorically supporting a peaceful solution to the issue through dialogue, while avoiding direct involvement in negotiations.[148]

However, India has still proven receptive to direct U.S. pressure regarding Iranian policy measures, especially after the Indo-U.S. nuclear deal. In fact, as one study on India's nuclear nonproliferation behavior post the declaration of Indo-U.S. negotiations on the Civilian Nuclear Agreement in July 2005 suggests, India did make some concessions to closely "align its nuclear security policy with the [United States]."[149] These concessions came in various forms. Under heavy U.S. lobbying, the Indian government voted for condemnatory IAEA resolutions against Iran in September 2005, February 2006, and November 2009.[150] When India joined the UN Security Council in 2011 as a non-permanent member for a term of two years, it supported punitive sanctions against Tehran per UNSC Resolution 1984.[151] Despite its pressing hydrocarbon import needs, India also reduced its Iranian crude oil imports from 21 million metric tonnes in 2009-2010 to 11 million metric tonnes in 2014-2015.

India cut nearly a third of Iranian oil imports following a visit to New Delhi by then U.S. Secretary of State Hillary Clinton in May 2012, during which she had concentrated talks on urging such a measure.[152] For New Delhi to consistently vote against Iran in the IAEA and UNSC while following the U.S. sanctions on oil trade with Tehran was not an easy policy decision; as the Indian foreign minister would claim in 2012, maintaining the balance "between the expectations of the international community and our friendship with Iran" had come at a cost and India had sacrificed a lot in aligning itself with the West.[153] For Iran, India's strategic moves on nonproliferation had engendered major differences between the two countries.[154] Such realignment in India's policy on Iran would not have been possible without an India-U.S. nuclear deal. As Ambassador Shyam Saran put it, "U.S. influenced India's vote on Iran."[155]

Not without reason, India welcomed the announcement of both the April 2015 Lausanne draft framework agreement and the July 2015 Joint Comprehensive Plan of Action.[156] The most immediate relief would be on the restrictions India had to face importing crude oil from Iran. With the relaxation of sanctions, relief for India would come in terms of not only energy imports but also the larger trade equation between the two countries that had suffered drastically under the sanctions regime. As an Indian official argued in the aftermath of the July agreement, "significant withdrawal of sanctions" could immensely benefit India-Iran "economic engagement."[157] Sanctions on Iran had also complicated India's strategy in Afghanistan.[158] With the U.S.-Iran nuclear deal, not only India but also the West would encourage Tehran to become an important stakeholder in Afghan peace and stability.[159]

The Iran case shows that India can work closely with the United States to support robust nonproliferation sanctions, so long as it is not expected to sacrifice its entire relationship with the target state in the service of this single objective. A recognition of this Indian approach could usefully guide American nonproliferation diplomacy in soliciting Indian support for resolving future state proliferation scenarios.

Nuclear Suppliers Group (NSG) Membership.

U.S. diplomacy was instrumental in ensuring that the NSG, a coalition of states that set global nuclear export rules, exempt India from its trade sanctions on non-NPT signatory states in 2008. Following the Group's rejection of an exemption in August 2008, the United States applied extraordinary diplomatic pressure to compel the NSG to reconvene for a second time in one year and pass the exemption.[160]

Since securing this exemption, India has subsequently sought admission to the NSG as a full member, alongside pursuing membership in the Missile Technology Control Regime (MTCR), Australia Group, and Wassenaar Arrangement groupings regulating export of missile, chemical/biological and sensitive conventional technologies respectively. For India's strategic community, winning admission to the NSG in particular will strengthen its claims to be seen as a responsible nuclear weapons state and to join that most exclusive state grouping, the permanent membership of the UNSC.[161]

India regularly engages leading states of the NSG to argue its case for admission.[162] India has harmonized its nuclear export control regulations with that of the NSG, leading the United States to conclude in

January 2015 that New Delhi is "ready for NSG membership."[163] The United States introduced a "food for thought" paper in 2011 to NSG deliberations regarding potential Indian membership, suggesting that the group could waive the normal NPT membership criterion for India; Britain issued a similar paper in 2013.[164] As well as that of the United States, India has also won the support of Australia, France, Germany, Russia, South Korea, and the United Kingdom.

However, a new member must be agreed by group consensus, and this diplomacy has not been enough to overcome the continuing opposition by several members, including Ireland, Austria, and New Zealand. India is unwilling to yield to demands for stronger nonproliferation commitments, which could include adopting a permanent test ban or ending fissile material production.[165] Given that the Indian "package" of nonproliferation commitments is substantially the same as it was for securing an NSG sanctions waiver in 2008, the situation is currently at an impasse.[166] The impasse on nonproliferation commitments notwithstanding, the biggest obstacle to India's NSG membership is China.[167]

Unlike other major powers, China has not been particularly enthusiastic about accepting India as a nuclear weapons state. Officially, China doesn't even recognize India's nuclear weapons and still sticks to the mandate of UNSC Resolution 1172 which calls for "elimination and rollback" of India's nuclear weapons. China viewed the Indo-U.S. nuclear deal with hostility, essentially an attempt by the United States to prop up India as a challenger to China's hegemony in Asia. Also, by granting a de facto nuclear status to India, the nuclear deal placed the two Asian rivals on the same pedestal. It is not without reason, therefore, that Beijing left no stone unturned to block the con-

sensus in the NSG when in 2008 the issue of an India-specific waiver came up for discussion.[168]

China's strategy to effectively sabotage India's NSG membership is by advocating a quid pro quo for Pakistan. Given Islamabad's past problems with proliferation, i.e., the A.Q. Khan Network, such a proposal has hardly any takers in the NSG. Its strategic merit, however, lies somewhere else. By linking India's membership with Pakistan, it not only invokes the fear of a crumbling nuclear regime under the weight of the exceptions being granted to India, as many committed nonproliferationists argue, but it also takes care of China's all-weather friendship with Pakistan. Unlike the Americans, who have neglected Islamabad's plea to open up the nuclear trade, China's insistence on Pakistan's admission into the NSG has won applause in Islamabad—and for the United States, vilification.[169] However, China's resistance to India's membership in the NSG is also symptomatic of the rivalry among these rising powers in other global institutions such as the UNSC. Such institutional shadowboxing will continue. Even when Prime Minister Modi has called upon the Chinese leadership to look at India's membership bid afresh, as such an overture from Beijing could possibly transform the India-China relationship, the odds are that China will continue to patronize Pakistan and resist India's entry into the NSG.[170]

With Narendra Modi becoming the prime minister, some positive movement on India's membership bid has followed. The new government was able to garner support from South Korea when Modi visited Seoul in 2015.[171] Given that the United States remains the preeminent global power, its support is critical for India's candidature. However, seven years into the Indo-U.S. nuclear deal, India has not been able to make a breakthrough. This has led to some palpable frus-

tration in New Delhi, as an Indian analyst observed, "the fact that this has lingered on for so many years doesn't speak well of either side in terms of fulfilling their commitments and obligations."[172] Washington has, in principle, accepted the fact that India's membership in the NSG and other export control regimes would "strengthen global nonproliferation and export control regimes," as was evident from the text of the Joint Declaration issued by the two sides when President Obama visited India in January 2015.[173] The joint statement indicated that the United States agrees to the fact that "India meets MTCR requirements and is ready for NSG membership" and that it "supports India's early application and eventual membership in all four regimes."[174] If this is the case, the need now in the two capitals is to synchronize their diplomatic strategies and energies to push India's candidature in the NSG. Reviewing diplomatic approaches toward India and NSG members in advancing the U.S. commitment to support Indian NSG membership should be a priority for the new U.S. administration to be elected in 2016.

The nonproliferation approaches of India and the United States are probably in greater alignment today than in previous eras. While the Iran and NSG membership issues frequently dominate news coverage of the bilateral strategic relationship, the implications of India's emerging nuclear doctrinal debate and posture threaten broader consequences for regional security, including that of the United States as it acts in Asia.

IMPLICATIONS OF INDIAN NUCLEAR DEVELOPMENTS FOR U.S. INTERESTS

India's nuclear force developments, and the unstable regional context in which they occur, present significant challenges for the United States. The U.S. Government, especially the Department of Defense and U.S. Congress, is focused upon strengthening its defense relationship with India. This drive has an underlying assumption that both the United States and India are like-minded partners in balancing against a revisionist China.[175] A Washington-based India expert observed that "the U.S. sees its geostrategic interests as converging with those of India, and seeing India as an asset in the Asia-Pacific."[176] As Washington is so encouraging of general Indian strategic projection, a risk is that its defense planners will overlook the need for an assessment of the potential effects of Indian nuclear developments for regional and U.S. security.

This section intends to highlight potential consequences of Indian nuclear developments, and their interactions with those of Pakistan and China for U.S. interests. These are grouped into three main areas. First, the growing disparity between Indian and Pakistani perceptions of the location of their bilateral nuclear threshold, combined with the introduction of Cold Start-like thinking in India and TNWs in Pakistan, could significantly complicate peaceful resolution of a future bilateral crisis. As significant responsibility for crisis resolution has fallen to the United States in the last three India-Pakistan crises, U.S. officials should closely track Indian and Pakistani strategic thinking and force development and build these new challenges into their crisis scenario planning before the next crisis.

Second, and related to the first issue, India, Pakistan, and China are conducting internal nuclear doctrinal debates and force planning without substantial strategic dialogue to clarify nuclear intentions and construct risk reduction mechanisms. An absence of such dialogue creates fertile ground for misperceptions of adversary nuclear intentions to affect nuclear planning and crisis decision-making.

Third, the naval competition of all three states is increasingly entering the nuclear realm. India and China are fielding SSBN fleets, while Pakistan appears to harbor intentions in that direction. With little strategic dialogue regarding nuclear and naval matters, misperceptions of the operational aegis and military role of rival nuclear-armed boats, combined with their growing conventional naval competition, could create more complex naval crisis scenarios. This is of relevance to U.S. interests as the pivot continues and more American forces are assigned to the Asian theater.

India-Pakistan Strategic Dynamics.

The difference in the breadth and health of the comparative Indian and Pakistani strategic relationships with the United States today is notable. This especially contrasts with the smaller discrepancy featured at the time of previous (but relatively recent) India-Pakistan bilateral crises.[177] Pakistan, a longstanding ally of the United States, is now subject to a bipartisan demand by leaders of the House of Representatives Foreign Affairs Committee for the United States to "consider implementing travel restrictions, suspending portions of assistance, and sanctioning Pakistani officials that maintain relationships with designated terrorist groups."[178] A senior member of the U.S. House For-

eign Affairs Subcommittee on the Middle East and South Asia commented, "Pakistan is like a black hole for American aid . . . Nothing good ever comes out."[179] There appears little prospect of U.S.-Pakistan relations improving from this low level in the near future.

The U.S. Government holds much sunnier views toward India. Defense cooperation proceeds at a rapid pace, with the United States becoming the largest defense supplier to India in recent years.[180] The Pentagon is keen to help develop Indian strategic projection as a valuable counterweight against that of China, while members of the U.S. Congress recognize the increasing political influence of Indian-Americans.[181] As an Indian ambassador recently noted, the House India Caucus is now the largest single-country-related caucus in the U.S. Congress.[182] These strategic and political forces for positive Indian relations are mutually reinforcing; a member and former co-chair of the House India Caucus, which exists partly to politically engage Indian-Americans, recently proposed an amendment to the 2016 National Defense Authorization Act supporting an "upgraded, strategic-plus relationship with India," which is "strengthened by the common commitment of both countries to democracy." The amendment further urged the United States to "welcome the role of the Republic of India in providing security and stability in the Indo-Pacific region and beyond."[183]

This increasingly benign view of Indian strategic activities, combined with the underlying U.S. focus on marshalling regional partners to complicate the rise of China, creates a concern that U.S. security planners will overlook or downplay potentially negative implications of some of the Indian strategic developments detailed in earlier sections. As a senior Congressional staffer points out, "Because we aren't planning to fight

the Indians, people here aren't worried about specific capabilities India is developing."[184]

However, as highlighted earlier, India and Pakistan have increasingly disparate perceptions and supportive strands of strategic thinking regarding where their bilateral nuclear threshold lies. Pakistan is actively trying to lower the threshold as far as it can through the introduction of the Nasr missile. Meanwhile, while Cold Start is not official policy, Indian strategic discourse continues to concentrate on developing similar options to Cold Start, with the idea of a higher nuclear threshold that can be further elevated through such limited conventional war plans. A second challenge is the ambiguity surrounding the potential nuclear status of the Indian Prahaar and Brahmos missiles, raising the risk of conflict escalation based upon misperception of their movement or deployment.

India could also adopt a more aggressive approach toward Pakistan in the event of a similar crisis to that of the Mumbai 2008 attacks. The dark views of Islamabad in Washington—with one Pakistan expert noting "the degree of sheer personal animosity felt by parts of the Washington establishment toward Pakistan"—could encourage Indian policymakers to believe they would have American support for a robust military response to Pakistan under a common U.S.-Indian rubric of counterterrorism.[185]

Therefore, the changing shape of the nuclear and conventional competition of India and Pakistan, combined with the lack of balance in their perceived relationships with Washington, create significantly different political and strategic contexts than have existed in previous India-Pakistan crises. The United States' dominant focus on India—of bolstering its defense capabilities to help balance China—should not preclude

identification of these previously mentioned new factors in India-Pakistan competition by U.S. security planners and related contingency planning for intervention in a crisis that may involve these factors.

Absence of Regional Dialogue.

Nuclear strategic discourse and force planning takes place in India, Pakistan, and China against a background of very little nuclear strategic dialogue. The dialogues that do take place are on bilateral levels. The unique dynamics of each of these bilateral dialogues largely preclude their conduct, leading to a clearer reading of regional nuclear intentions and the initiation of risk reduction measures.

China and Pakistan have long had an "all-weather" strategic partnership, encompassing extensive Chinese economic and defense assistance to develop Pakistan's infrastructure and ensure it remains militarily competitive with India.[186] This has historically included significant nuclear technology proliferation to aid Pakistan's nuclear force development.[187] While Beijing and Islamabad have regular strategic dialogues, the nature of their relationship as military allies means that there is little potential for such bilateral interactions to lead to nuclear risk reduction efforts with their mutual adversary—India. Indeed, Pakistan's nuclear force development shows no signs of slowing from its present energetic pace.

India and Pakistan have irregular bilateral strategic dialogues, with discussion on nuclear issues largely subordinate to those on difficult disputes regarding the future ownership of Kashmir and Pakistan-sponsored terrorism. For example, the most recent proposed dialogue in August 2015—cancelled due to

procedural arguments regarding Pakistan's disputed right to liaise with the Hurriyat Kashmiri separatist group beforehand—did not appear to feature nuclear talks on the agenda.[188]

Further difficulties arise from the prospect of arranging bilateral India-Pakistan nuclear arms control measures, despite the reality of an India-Pakistan-China triad. India and Pakistan have negotiated some limited risk reduction measures in the past, including agreements to give prior warning before a missile test; not to target nuclear facilities; and hotlines between militaries and between prime ministers. Pakistan has pushed for a further-reaching bilateral "strategic restraint regime" that would ban introduction of new systems such as SLBMs or ballistic missile defense, implement a bilateral test ban, and also involve dialogues on the conventional force balance and the Kashmir conflict.[189] India has reportedly rejected such proposals due to reasoning that its nuclear force must also be built to deter China and cannot be capped solely based upon its nuclear and conventional force balance with Pakistan.[190] This outcome points to the need for a trilateral India-Pakistan-China nuclear dialogue.

Strategic dialogue between New Delhi and Beijing is also intermittent, and similarly subordinate to greater geostrategic issues, most prominently their continuing border dispute. India and China have recently held bilateral nuclear dialogues on general disarmament and nonproliferation issues.[191] India has further sought agreement with China on bilateral nuclear-confidence building measures, including the NFU policy and detargeting pacts. However, China refuses to recognize India as a nuclear peer; it insists it will only discuss nuclear weapons with India in the context of the NPT, in effect ruling out progress on such topics.[192]

Just as India cannot agree to bilateral arms control pacts with Pakistan, as its nuclear weapons are not Pakistan-specific, the Chinese hesitancy to enter similar bilateral negotiations with India may be partly explained by the fact that its nuclear weapons are not India-specific. American nuclear and conventional intentions (especially the implications of ballistic missile defense) are the principal threats perceived by Chinese nuclear planners. Therefore, a trilateral India-Pakistan-China nuclear dialogue, and all the accordant potential benefits in limiting nuclear competition and reducing the dangers of misperception, may only be able to emerge as the result of direct American encouragement and participation.

Indian Ocean Nuclear Competition.

India and China plan to field SSBN fleets in the near future, while Pakistan appears to be developing nuclear naval plans. These enter the water in a context where there are no regular nuclear dialogues as outlined above, and where conventional naval competition is steadily becoming more tense. Recent conventional developments include India's growing criticism of Chinese territorial claims in the South China Sea; a reported incident where an Indian amphibious assault ship was challenged by the Chinese Navy off the coast of Vietnam; the aforementioned popular "String of Pearls" theory in India, which expresses worries of Chinese naval encirclement; and in Pakistan, the continuing fear of an Indian naval blockade.[193]

Following recent diversions of diplomatic time and energy to the Russia/eastern Ukraine and Iran nuclear problems, the United States appears to be currently rededicating its attention to its pivot to Asia. The U.S. Navy Secretary recently affirmed that:

> by the end of the decade 60% of our fleet will be based in the Pacific, a fleet which will be larger than the one we have today.[194]

The growing naval competition among India, China, and Pakistan—itself part of the broader current geopolitical trend of rising Indian Ocean competition—could lead to U.S. diplomats and regional U.S. forces becoming involved in related crisis resolution.

There are also real possibilities for such a crisis to involve nuclear misperceptions. Such misperceptions could emanate from the aforementioned absence of trilateral nuclear strategic dialogue; the Indian strategic tendency to view all Chinese naval vessels, no matter their conventional or nuclear status or individual capabilities, as part of a monolithic creeping advance; the need for new SSBN fleets to be trialed in increasingly contested seas, with less certainty as to the specific maritime boundaries of many states; and the general lack of practice all three states have with fielding SSBN and naval forces, and following likelihood that some lessons will be learnt in the early years of operation. As shown in the 2009 mid-Atlantic collision of SSBNs of the experienced naval nuclear forces of France and Britain, accidents can happen to any state.[195]

As the United States commits more diplomatic attention and military resources to the Indian Ocean, U.S. defense planners should closely monitor the naval nuclear intentions of all three states and develop crisis-planning scenarios based upon their potential interactions. This prior awareness and planning will aid U.S. policymakers and forces should they become involved in future crisis resolution related to this growing regional naval nuclear competition.

Also, as part of U.S.-India defense cooperation efforts, Washington should engage New Delhi in naval surveillance technology cooperation to help both states disambiguate Chinese conventional from nuclear naval forces. Such a measure would clarify Chinese naval movements and prevent a crisis arising from misperception.

CONCLUSION

This Letort Paper has outlined four major trends in India's nuclear policies and thinking. First, India's technical capabilities in nuclear weapons delivery systems have seen significant growth since 1998. It is now on the cusp of possessing a truly diverse triadic nuclear force consisting of ICBMs, aircraft, and SSBNs.

India's delivery capabilities are influenced by its traditional emphasis on strategic and technological autonomy, and the pressures and pulls of its scientific enclave. However, they are also largely a response to changing regional dynamics. India strives to close the perceived deterrence gap with Beijing while simultaneously seeking to deter Pakistan's interest in nuclear first use in the event of a conventional crisis with New Delhi. However, the conundrum posed by Pakistan's "full spectrum deterrence" posture cannot be answered by technological capabilities alone.

Second, the current debate surrounding India's nuclear doctrine points to the fact that this realization has dawned upon its strategic elite. India's NFU policy and massive retaliation policies are now under substantial domestic pressure. The government has, however, chosen not to alter the doctrinal status quo, largely as it may undermine India's image as a responsible nuclear power and also its complete accom-

modation in the global nuclear order. Nevertheless, the growing blurring of regional nuclear and conventional force roles and perceived missions continues and remains unaddressed by a new doctrine.

The third trend concerns India's nuclear nonproliferation policy, driven by an objective of accommodation. In the case of the Iran nuclear issue, New Delhi has repeatedly demonstrated its willingness to work with Washington against the further proliferation of nuclear weapons. Responsibility and restraint as a nuclear weapons state is also the edifice upon which India has built its claim for NSG membership.

The fourth trend is the expanding regional aegis of India's nuclear projection, alongside that of Pakistan and China. This is especially visible in the looming entry of trilateral nuclear competition into naval domains. Regional strategic stability is under increasing stress, further complicated by the absence of trilateral nuclear dialogue. Given the above conditions, several policy imperatives should be considered by both New Delhi and Washington.

New Delhi's nuclear deterrent has suffered due to Indian strategic silence over its overall defense policy and the role of nuclear weapons therein. Not a single public strategic defense review has been promulgated by New Delhi since Indian independence. The need for a defense review following almost 15 years of overt nuclear weapons possession has been emphasized by all sections of India's strategic elite. New Delhi would help assuage both domestic and international concerns by conducting a thorough review of its defense policy objectives and following conventional and nuclear postures. This would particularly assist in assessing India's nuclear weapons philosophy in the context of emerging regional threats, more clearly structuring

the role of its nuclear force as a last-resort guarantor of national survival, and supplying greater emphasis to defense policymaking on building stronger conventional defenses to meet most threats that India faces.

Washington must pay attention to the strategic churning currently visible in the region, as observed in rising India-Pakistan and India-Pakistan-China nuclear tensions. The United States should undertake contingency planning both for an India-Pakistan crisis along their land border involving their new conventional and nuclear developments, and for a potential India-Pakistan-China naval crisis complicated by the extension of their naval competition into the nuclear domain. To strengthen the potential for regional strategic stability more generally, the United States should encourage India, Pakistan, and China to initiate a trilateral nuclear dialogue. Given the importance of American strategic forces to Chinese nuclear planning, the success of this latter initiative may rely upon American involvement as a full partner in discussing its own nuclear and conventional deployments and their underlying intentions. As a resident nuclear power in Asia, the United States should prepare to commit to this.

Finally, in addressing these challenges, the United States should integrate its policy responses into its broader regional strategy of preventing Chinese military dominance and deterring Beijing from ending the norm of freedom of access to Indian Ocean and Asia-Pacific naval trade and transport routes. As the United States assigns more forces and diplomatic focus to the region in pursuit of these objectives, finding solutions to the above strategic stability concerns is crucial for U.S. interests.

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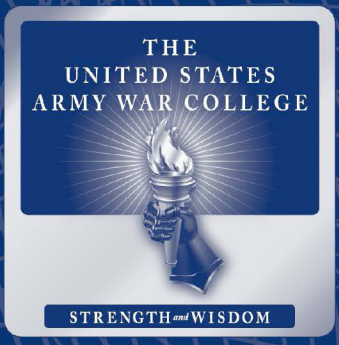

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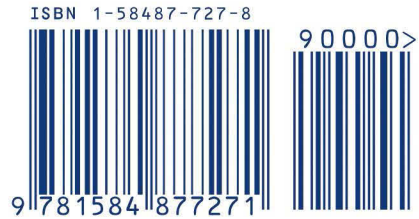

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