# DETERRENCE INSTABILITY

## & NUCLEAR WEAPONS IN SOUTH ASIA

EDITED BY

**Michael Krepon**

**Joshua T. White**

**Julia Thompson**

**Shane Mason**

**STIMSON**

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# CONTENTS

# PREFACE

I am pleased to present the latest publication of the Stimson Center's South Asia program. Our new monograph, like the last, *Deterrence Stability and Escalation Control in South Asia*, will hopefully become a standard reference for academic courses as well as essential reading for government officials, military officers, and nongovernmental experts.

Stimson is a thought-leader in the dynamics of deterrence, escalation, crisis management, and nuclear competition on the subcontinent. For more than 25 years, the Stimson Center has examined the threat of conflict in South Asia, ways to mitigate tensions between India and Pakistan, and means to reduce nuclear risks.

During the past year, Stimson has convened workshops at which some of the authors in this volume have presented their works in progress. Feedback from these workshops and from project advisors is reflected in this collection.

I'd also like to call your attention to related activities from our South Asia program that contribute to our ability to be a valued resource on this vital region. In 2013, Stimson launched a new website, South Asian Voices (www.southasian-voices.org), to give voice to a rising generation of strategic analysts and to facilitate cross-border dialogue. In 2015, Stimson will launch a ground-breaking, open online course on nuclear issues in South Asia that will give thousands of students the chance to study this important topic free of charge.

I wish to express gratitude to the Carnegie Corporation of New York, the John D. and Catherine T. MacArthur Foundation, and the National Nuclear Security Administration for their support of Stimson's programming on nuclear issues in South Asia. The editors also wish to thank Stimson's communications team — Jim Baird, Greg Lachapelle, and Lita Ledesma — copy editor Jenny Moore, and interns Sanaa Anwar, Kyle Deming, Leslie Glotzer, Siddharth Ravishankar, and Elizabeth Whitfield.


Sincerely,

Ellen Laipson
President and CEO, Stimson Center

# KEY TERMS AND ACRONYMS

| | |
|---|---|
| AFAP | Artillery-fired Atomic Projectile |
| BMD | Ballistic Missile Defense |
| CBM | Confidence-building Measure |
| CMD | Credible Minimum Deterrence |
| CTBT | Comprehensive Nuclear-Test-Ban Treaty |
| DAE | Department of Atomic Energy (India) |
| DRDO | Defence Research and Development Organisation |
| FMCT | Fissile Material Cut-off Treaty |
| IAF | Indian Air Force |
| ICBM | Intercontinental Ballistic Missile |
| IRBM | Intermediate-range Ballistic Missile |
| ISI | Inter-Services Intelligence |
| ISR | Intelligence, Surveillance, and Reconnaissance |
| LeT | Lashkar-e-Taiba |
| LNO | Limited Nuclear Options |
| LoAC | Line of Actual Control |
| LoC | Line of Control |
| MIRV | Multiple Independently Targetable Re-entry Vehicle |
| MOD | Ministry of Defence |
| MRBM | Medium-range Ballistic Missile |
| NCA | Nuclear Command Authority (India) |
| NCA | National Command Authority (Pakistan) |
| NFU | No First Use |
| NRRM | Nuclear Risk Reduction Measure |
| NSA | National Security Advisor (India) |
| PAL | Permissive Action Link |
| SFC | Strategic Forces Command (India) |
| SLBM | Submarine-launched Ballistic Missile |
| SPD | Strategic Plans Division (Pakistan) |
| TNW | Tactical Nuclear Weapon |

# INTRODUCTION

*Michael Krepon*

Deterrence between India and Pakistan is becoming less stable with the passage of time and the increase in nuclear weapon capabilities. India and Pakistan have not addressed basic issues in dispute, nor have they agreed to set them aside. Direct trade and other means of connectivity remain purposefully circumscribed. Spoilers who oppose Pakistan's rapprochement with India remain in place and are poorly constrained. The last massive, deadly acts of violence against India took place in 2008, directed against iconic targets in Mumbai. These terrorist acts effectively nullified efforts by Indian and Pakistani leaders to improve relations. Seven years earlier, another spectacular act of extremist violence directed against the Indian Parliament building brought India and Pakistan to the brink of war.

In 2015, seven years after the Mumbai attacks, India and Pakistan are no closer to resolving their differences. Instead, backsliding is painfully evident. The issue of the disputed Kashmir border, which remained mostly quiet from 2003 to 2013, has heated up again. Pakistan and India continue to diversify their nuclear weapon capabilities in ways that make deterrence stability more difficult. Two kinds of delivery vehicles — short-range systems that must operate close to the frontlines, and sea-based systems — are especially problematic when command and control is maturing and when operational safeguards are opaque. These conditions now apply to Pakistan's investments in short-range systems to counter Indian conventional military advantages, and to India's sea-based nuclear capabilities that are coming online.

Deterrence stability can be secured most readily when states have no reason to fight — or if they do, when nuclear and conventional capabilities are balanced and national trajectories are commensurate. Nuclear capabilities are roughly equal on the subcontinent, but disparities in national power are great and growing. The advent of new military technologies and resource advantages will further extend India's lead over Pakistan in conventional capabilities, while providing India the capacity to outpace Pakistan in nuclear capabilities. Pakistan's security managers are making headway to reclaim the writ of the state against violent extremists — but not against those who are dead-set against more normal ties with India. Pakistan's nuclear capabilities continue to grow as social and economic conditions languish. Nuclear postures are

evolving in ways that fuel requirements for more weapons that will, in turn, exacerbate security dilemmas.

The essays in this volume assess nuclear dynamics in South Asia. The chapters by Manoj Joshi and Shashank Joshi assess Indian nuclear posture and its potential evolution. Key elements of Indian and Pakistani strategic culture intersect at times in negative, reinforcing ways, as analyzed in chapters by Rasul Bakhsh Rais and Sarang Shidore. Pakistan's national security managers have decided that the risks involved with inducting short-range nuclear-capable systems are worth the benefits of deterring Indian ground forces. A chapter in this volume by Jeffrey D. McCausland suggests a far different risk-benefit equation. New technologies beckon India and China that could take their nuclear competition to a higher level, raising more dilemmas for Pakistan. Joshua T. White and Kyle Deming's chapter looks into this uncertain future. Taken together, these chapters point to serious challenges to deterrence stability unless leaders in India and Pakistan try to resolve their grievances, or consider dampening measures to mitigate their costly and risky strategic competition. If not, I argue in my chapter, deterrence stability will elude India and Pakistan, and difficult times lie ahead.

My essay, "The Myth of Deterrence Stability Between Nuclear-Armed Rivals," argues that nuclear arsenals did not help stabilize the Cold War competition between the United States and the Soviet Union — even when both had acquired secure second-strike forces. In my view, offsetting nuclear capabilities are also unlikely to stabilize relations between India and Pakistan. Instead, I argue that stabilizing the nuclear competition will be even harder for India and Pakistan than it was for the United States and the Soviet Union.

In "The Credibility of India's Nuclear Deterrent," Manoj Joshi analyzes key conditions driving possible changes in India's nuclear doctrine — domestic politics, the nature of political leadership, the imperatives of command and control, civil-military relations, and external factors. He focuses in particular on pressures regarding India's no first use (NFU) doctrine and its declaratory posture of massive retaliation.

Shashank Joshi also focuses on the doctrinal precepts of NFU and massive retaliation in his essay "An Evolving Indian Nuclear Doctrine?" Joshi concludes that India is unlikely to break sharply from current doctrine, particularly with respect to NFU. He views a nuanced change to India's massive retaliation pledge as much more likely.

In "Pakistan's Strategic Culture and Deterrence Stability on the Subcontinent," Rasul Bakhsh Rais argues that Pakistan's strategic culture has mixed characteristics of malleability and hardiness. He identifies the core elements of Pakistan's strategic culture as countering Indian dominance, the primacy of national security, pride in Muslim sovereignty, and reliance on a proactive means of national defense. Bakhsh Rais concludes that these key aspects of strategic culture are adaptable, but have had an enduring influence in Pakistan's dealings with India, contributing to instability, uncertainty, and the potential for another clash.

Sarang Shidore's essay, "India's Strategic Culture and Deterrence Stability on the Subcontinent," explores the evolution of India's strategic culture and its implications for deterrence stability in South Asia. Shidore argues that two core operational aspects of India's strategic culture — nuclear minimalism and strategic restraint — are increasingly under stress, and that modifications of these precepts are likely to increase deterrence instability. He concludes that the rise of realism in Indian national security policy will challenge India's strategic restraint.

In "Pakistan's Tactical Nuclear Weapons: Operational Myths and Realities," Jeffrey D. McCausland compares Pakistan's embrace of short-range nuclear-capable systems to that of NATO's during the Cold War. He explores the enormous operational and practical challenges that US and NATO military planners faced — which were never resolved — and argues that Pakistani military planners will likely fare no better. McCausland concludes that the induction of short-range nuclear-capable delivery vehicles on the subcontinent — particularly if deployed at scale — is both dangerous and problematic.

Joshua T. White and Kyle Deming argue in "Dependent Trajectories: India's MIRV Program and Deterrence Stability in South Asia" that India's development of MIRV (i.e., multiple independently targetable re-entry vehicle) capabilities may unintentionally presage movement toward a counterforce nuclear posture and doctrine. They review the probable drivers of India's pursuit of MIRV technology, and contend that this effort is likely influenced by technological path-dependence as much as an assessment of India's nuclear force requirements. White and Deming argue that given the particularly potent signaling risks associated with the simultaneous development of MIRVs and ballistic missile defense (BMD), India's political leadership would do well to proceed cautiously in the years ahead.

Taken together, these essays highlight how doctrinal, strategic, and technological developments contribute to growing deterrence instability in South Asia.

# THE MYTH OF DETERRENCE STABILITY BETWEEN NUCLEAR-ARMED RIVALS

*Michael Krepon*

During the Cold War, deterrence strategists and arms controllers sought to stabilize the dangerous nuclear competition between the United States and Soviet Union. The goal of deterrence stability proved to be elusive. This essay looks back at the superpower competition and forward to nuclear dynamics between India and Pakistan.[1] I argue that nuclear deterrence has had limited, but important, utility in hard cases by preventing large-scale conventional war and by fostering cautionary behavior in severe crises. Offsetting nuclear arsenals were not, however, a stabilizing feature during the Cold War. Just as deterrence stability eluded the nuclear superpowers, it will be similarly elusive on the subcontinent.

Despite differences in the scale and circumstances of these nuclear competitions, both pairings have in common an interactive strategic competition compounded by conventional force imbalances and contentious issues that could lead to conflict. Under these circumstances, I argue that deterrence stability between nuclear-armed adversaries is a mirage. Instead, deterrence stability has proven feasible only when nuclear-armed states have little or nothing to fight about, when they address their security concerns through diplomatic means, when they agree to set them aside, or when one of the rivals collapses. Cases in which a modicum of deterrence stability has been achieved are noted only in passing, below. The bulk of this essay focuses on two very hard cases.

Strategic modernization programs in hard cases are deemed necessary to dissuade and deter, but they do not generate conditions of deterrence stability. Instead, they result in a greater sense of insecurity as contentious issues are magnified by the growth of offsetting nuclear capabilities. Diplomacy to reduce tensions is an essential path to increased security that can be buttressed by arms control agreements, confidence-building, transparency, and nuclear risk-reduction measures (NRRMs). But unless these useful steps are accompanied by a broader resolution of security concerns, they will not suffice to provide deterrence stability between rivals with disparate conventional capabilities and severe security concerns. Deterrence stability between the superpowers was not assured until the Cold War ended with the Soviet Union's demise. It is unlikely to be achieved on the subcontinent as long as India and Pakistan remain at loggerheads.

## Deterrence Instability Between the Superpowers

States decide to acquire nuclear weapons when they believe that severe security dilemmas cannot be addressed in other ways. Possessing these weapons against a similarly armed foe or against an adversary with stronger conventional capabilities provides for some measure of deterrence, dissuasion, and national assurance. During the Cold War nuclear weapons helped to keep border skirmishes limited, to prevent large-scale conventional war between major powers, and to foster cautionary behavior in severe crises. These were — and remain — significant accomplishments, but none can be credited to conditions of deterrence stability. Instead, these accomplishments occurred during periods of greatly disparate nuclear capabilities, the advent of significant technological advances in war-fighting capabilities, and an accelerated arms competition. A mutual sense of deterrence stability did not account for the nonuse of nuclear weapons during the Cold War; this accomplishment was instead due to wise decision-making, cautionary behavior, and good fortune.

The United States and the Soviet Union could not feel safe without nuclear weapons. Nor did they feel safe with nuclear weapons. Offsetting nuclear capabilities generated security concerns as well as benefits. They diminished security by fostering risky behavior under the nuclear threshold and by intensifying crises. The possession of nuclear weapons during the Cold War did not deter limited border clashes between the Soviet Union and China; conventional wars with non-nuclear weapon states (the United Kingdom and Argentina); proxy wars (Vietnam, Afghanistan); and major crises (Berlin, Cuba, the Middle East). Security dilemmas were not stabilized by the presence of nuclear weapons; they were exacerbated instead.

The possession of assured retaliatory capabilities, even in significant numbers, did not result in deterrence stability. Instead, assurance eroded as the accuracy of delivering warheads improved, enabling the superpowers to move beyond countervalue and "soft" counterforce. Prompt, hard-target kill capabilities diminished mutual security by lending credence to concerns that nuclear postures were attuned to war-fighting. Deterrence stability between the superpowers was not achievable in an advanced, interactive nuclear competition driven by significant security concerns and conventional force imbalances.

The dilemmas of deterrence theory led Western strategists to advance the concepts of deterrence and strategic stability — terms that were and are often used interchangeably. This essay defines strategic stability as a general equilibrium derived from all components of national power. Deterrence stability is defined

here as a subset of strategic stability in which both adversaries feel that offsetting nuclear capabilities are generally balanced and stably configured, thereby providing assurance against a nuclear attack or the damaging use of conventional military capabilities.

At the outset of the Atomic Age, those trying to construct a stable international order and avoid a nuclear Armageddon faced the choice of trying to put the genie back in the bottle — a Sisyphean task — or to somehow leverage the Bomb's awesome destructive powers to try to create conditions of stability. Conceptualization predated the Soviet Union's first atomic test. Western strategists assumed that it would only be a matter of time before the Soviet Union matched US technological achievements. Even more unsettling, as Bernard Brodie forecast in 1946, "No adequate defense against the bomb exists, and the possibilities of its existence in the future are exceedingly remote."[2] Brodie concluded that, "If the atomic bomb can be used without fear of substantial retaliation in kind, it will clearly encourage aggression. So much the more reason, therefore, to take all possible steps to assure … that the aggressor who uses the bomb will have it used against him."[3] The construction of a belief system in deterrence stability and the elements required to sustain it in the United States reflected a hope born of necessity.

Very early on, the requirement for an assured retaliatory capability became the bedrock foundation of deterrence theory. When retaliatory capabilities were deemed deficient and basing modes seen as too vulnerable, more capability and diversity were called for. Henry Kissinger and Brent Scowcroft summarized decades of thinking about stable deterrence as "maintaining strategic forces of sufficient size and composition that a first strike cannot reduce retaliation to a level acceptable to the aggressor."[4] This formulation was concise and clear, but its operationalization was always steeped in complexity, borrowing, of necessity, the "prisoner's dilemma" concept and other abstractions from game theory. As Lawrence Freedman noted,

> There were no analogous situations to draw from. Human imagination or intuition was inadequate to cope. The abstractions of Game Theory and similar devices were useful as much because of the lack of suitable alternatives than anything else.

> The success of formal strategists was in providing a rationale for a policy of stable deterrence based on secure second-strike forces. It was a policy determined to a large extent by technology, but the strategists made the abandonment of a first-strike option a source of satisfaction rather than a disappointment.[5]

Kenneth Waltz argued that exacting, outsized calculations of nuclear deterrence requirements were a waste of intellectual effort and defense expenditures. He asserted that nuclear deterrence was relatively easy to contrive:

> Indeed, in an important sense, nuclear weapons eliminate strategy. If one thinks of strategies as being designed for defending national objectives or for gaining them by military force and as implying a choice about how major wars will be fought, nuclear weapons make strategy obsolete.[6]

Waltz was always an outlier, but early on his thinking about constructing stable nuclear deterrence in relatively cost-effective ways seemed feasible. After all, how much investment would be required for secure second-strike capabilities? Here's how Henry Kissinger addressed the problem of deterrence stability in *Nuclear Weapons and Foreign Policy*:

> With modern weapons, even an inferior retaliatory capability may deter, not because it can inflict unacceptable damage, but because it can inflict unacceptable losses … And when weapons can be made of any desired degree of destructiveness, a point will be reached at which additional increments of destructive power yield diminishing returns. What is the sense in developing a weapon that can destroy a city twice over?[7]

Kissinger modified his views when the extent of Soviet nuclear exertions became apparent. Falling behind in this competition was not an option because these weapons were totems of national power and indicators of superpower standing. They were also accorded significant powers to prevent direct conflicts between the superpowers from crossing the nuclear threshold in proxy wars, limited wars, or crises. To utilize the leverage that nuclear capabilities were thought to provide, they could not be inferior to one's adversary. Conversely, the more superior nuclear capabilities were, the more leverage one might hope to derive from them. A strenuous nuclear competition resulted from these concepts, and from the domestic constituencies that believed in them. Requirements became open-ended, even when deterrence stability was stripped of its larger, illusionary strategic objectives, and even when arsenals rose to previously unimagined heights.

In between inferior and superior nuclear capabilities lay rough or essential equivalence in offsetting nuclear deterrents. The Nixon administration's public declarations of intent to seek such equivalence were deemed a precondition to the pursuit of strategic arms limitation. Otherwise, how could negotiations between superpowers succeed if one were accorded strategic superiority? Equivalence

was, however, quite difficult to determine because modernization programs were ongoing and force structures differed. Advantage or disadvantage lay in the eye of the beholder. Those most skeptical of an adversary's intentions found ready confirmation in strategic modernization programs and force structure. Those skeptical of the value of nuclear weapons found comfort in strategic sufficiency. Treaties to place constraints on the most powerful weapons and delivery vehicles ever devised were negotiated with heroic effort. The essential equivalence and deterrence stability that treaties sought to codify had to withstand changing superpower fortunes, the vicissitudes of bilateral ties, and the dynamism of technological developments. This proved to be a very tall order.

Deterrence has always been about psychology as well as nuclear capabilities; psychology was malleable as nuclear capabilities grew. Thomas Schelling described the essence of deterrence as being "the threat that leaves something to chance."[8] The element of chance — that deterrence might fail and that the nuclear threshold might be crossed — was supposed to prompt caution in situations of utmost danger. Kenneth Boulding turned this argument on its head, noting that deterrence could "be stable in the short run, but there must be a positive probability of it failing; otherwise it would cease to deter."[9] Boulding's insight motivated doves to seek détente and treaties to prevent catastrophic outcomes, while hawks sought more counterforce and damage-limiting capabilities to deter and deal with worst cases.

During the Cold War, stability rested more on the state of US-Soviet relations than on offsetting nuclear weapon capabilities. After harrowing crises in Berlin and Cuba, Washington and Moscow tacitly agreed not to play with fire in each other's most sensitive zones. They agreed to accept the status quo in a divided Europe. They negotiated, with extraordinary effort, treaties that constrained nuclear testing and limited, then reduced, and even eliminated deployed nuclear forces. Even so, deterrence stability remained elusive. Détente lasted for brief periods, interrupted by adverse developments in the Middle East and in Africa. Despite treaties limiting nuclear testing and strategic arms, the superpower nuclear competition proved hard to control. Strategic modernization programs received an impetus after treaty signings to mollify domestic skeptics and prove that neither superpower was letting down its guard. Failure to compete generated opposition at home and doubts abroad. The choreography of competition became institutionalized, driven by powerful domestic constituencies.

Confidence-building, transparency, and NRRMs helped to keep the Cold War from becoming hot. Negotiations helped clarify ways of thinking, and treaties provided contours for the strategic competition. Even so, treaties channeled that competition in ways both stabilizing (e.g., strict limitations on national ballistic missile defenses) and destabilizing (e.g., multiple independently targetable re-entry vehicles, or MIRVs). Diplomacy provided channels of communication, and treaties helped to prevent backsliding during hard times. Still, deterrence stability between the United States and Soviet Union proved elusive until the Cold War was ending.

None of the brilliant conceptualizers of deterrence theory imagined that steps to enhance deterrence would lead to arsenals numbering in the tens of thousands. But one move led inexorably to the next, an interactive process that became known as the action-reaction syndrome. Secretary of Defense Robert McNamara used these words in a deeply conflicted speech in 1967 at which he railed at the nuclear arms race while endorsing a limited missile defense system:

> The Soviet Union and the United States mutually influence one another's strategic plans. Whatever be their intentions, whatever be our intentions, actions … on either side relating to the buildup of nuclear forces, be they either offensive or defensive weapons, necessarily trigger reactions on the other side. It is this action-reaction phenomenon that fuels an arms race.[10]

Deterrence strategists chafed at McNamara's formulation because it pointed to the futility of an extended competition while implying a reluctance to compete. Albert Wohlstetter labeled it a "portentous tautology."[11] But the reality of the action-reaction syndrome was undeniable; domestic arguments, reflected by Wohlstetter's caustic essays, revolved around the contention that the United States wasn't reacting energetically enough to Soviet strategic modernization programs.

Whether one accepted or took issue with the action-reaction syndrome, the superpower strategic competition undermined deterrence stability with the advent of improved accuracy for long-range missiles and MIRVs. The strategic competition fed on itself, nourished by generously funded, competing nuclear laboratories and production complexes. Deterrence strategists concluded that there had to be some method behind this madness; explanations keyed to domestic and bureaucratic impulses alone were found wanting. Paul H. Nitze, a "master of the game" of diplomacy as well as deterrence, argued in "Assuring Strategic Stability in an Era of Détente" that the Soviet buildup had

to be understood as the pursuit of "a nuclear superiority that is not merely quantitative but designed to produce a theoretical war-winning capability."[12] If not countered, the United States would unwittingly "undermine the present détente situation, with results that could only resurrect the danger of nuclear confrontation or, alternatively, increase the prospect of Soviet expansion through other means of pressure."[13]

Nitze, Wohlstetter, James Schlesinger, and other deterrence strategists had their analogues in the Soviet Union who believed that additional increments of US nuclear capability had to reflect a malevolent strategic purpose that needed to be countered. This shift from countervalue and soft counterforce to prompt, hard-target kill capabilities vastly increased requirements. Cruise missiles supplemented ballistic missiles. Triads were built out. Warhead designs were not built to last; newer versions were always in the pipeline. In all, US and Soviet production complexes churned out more than 100,000 nuclear warheads.

"Strengthening" deterrence in these ways increased security concerns rather than deterrence stability. The superpower competition ended only when both countries were led by risk-taking leaders who rejected nuclear orthodoxy. The odd couple of Mikhail Gorbachev and Ronald Reagan broke the back of the nuclear arms race by negotiating the Intermediate-range Nuclear Forces (INF) Treaty, which eliminated nuclear weapon delivery systems on several rungs of the escalation ladder deemed essential by deterrence strategists. Deep cuts in strategic nuclear delivery vehicles followed. Gorbachev was clearly motivated by his country's bleak economic prospects. While spending in excess of 20 percent of the national budget on its military, the Soviet Empire collapsed as a result of internal political weaknesses and economic distress. Nuclear excess provided no help in countering these disabilities. Deterrence stability was achieved only when the strategic arms race died alongside the Soviet Union. When the Cold War ended, Washington and Moscow had nothing to fight about and the Kremlin was in no position to reassert itself.

The limitations of nuclear deterrence reappeared as the Russian Federation revived. The conflicts of interest now glaringly evident between Washington and Moscow come at a time when the United States and the Russian Federation retain very large and roughly equivalent nuclear deterrents, with each possessing secure second-strike capabilities. Despite these conditions, which would seem conducive to the promise of deterrence stability, a revanchist Kremlin has annexed Crimea and is violating the sovereignty of Georgia, Moldova, and Ukraine. President Vladimir Putin continues to equate Moscow's standing

with its nuclear weapon capabilities, especially when Russia's demographic and economic prospects look poor.

As with the old US-Soviet competition, the benefits of nuclear deterrence in the current US-Russian relationship are of limited scope. Offsetting nuclear capabilities at high levels has not ensured stability in bilateral relations, and has not foreclosed significant conflicts of interest. As was the case during the Cold War, increased military operations in the air and at sea accompany heightened tensions, increasing the risks of accidents with escalatory potential. The risk of a nuclear confrontation between the United States and Russia remains limited because the issues in contention pale in comparison to those during the Cold War; a history of restraint in prior crises played out under the nuclear shadow; and common interests remain in place despite heightened tensions.

Currently, as during the Cold War, deterrence stability remains elusive. Strategic modernization programs are well underway in Russia and are ramping up in the United States. Replacing US systems can be justified on two grounds — that they are aging, and that the Kremlin is unlikely to be convinced to pursue another round of verifiable reductions without plans for replacements. Arguments for replacing US strategic bombers, submarines, and missiles based on the rationales of "strengthening" deterrence and "assuring" deterrence stability lack credibility. Deterrence by means of strategic modernization programs will not be strengthened as long as Washington and Moscow remain at loggerheads. Nuclear weapons deter only a small but critically important subset of adversarial moves — not the ones that are most likely or already evident in places such as eastern Ukraine. For these contingencies, more prosaic countersteps, such as sanctions and help to beleaguered states, have far greater value.

## Other Cases

Other nuclear-armed states have managed to avoid interactive arms racing, thereby avoiding deterrence instability because of extenuating circumstances, especially the presence of a superpower ally and the absence of contentious issues that could lead to warfare. The brief sketches that follow are offered to serve as a contrast to the US-Soviet and India-Pakistan cases.

The UK and France each pursued nuclear arsenals during a time of heightened strategic competition and harrowing Cold War flashpoints. Both were able to establish finite requirements for nuclear deterrence with some degree of confidence because both were allied to a nuclear superpower. In France's case, a significant measure of strategic autonomy was still deemed essential, while the

UK chose to collaborate intensively with the United States. Although target sets were adequately covered by US nuclear forces, for both France and the UK the possession of their own credible minimum deterrents suited each nation's security interests as well as the desire for a sense of place in the international order.

While the United States shouldered the risks and costs of arms racing, NATO allies more directly in the line of fire in the event of a land war in Central Europe assumed the burdens of basing tactical nuclear weapons and nuclear-capable aircraft on their soil. When deterrence stability seemed particularly at risk in the 1980s, five NATO partners — the UK, Belgium, the Netherlands, West Germany, and Italy — agreed to counter Soviet moves by hosting intermediate-range nuclear forces. After the INF Treaty was ratified and implemented, only a few hundred tactical nuclear weapons remained in place, serving a purpose that was more symbolic than military.

The key condition for deterrence stability — the absence of something to fight about — has dissipated over time for the UK and France. The earliest Cold War flashpoint over Berlin, when the UK and France deployed ground forces, came before their acquisition of nuclear weapons. Their midsized deterrents remained at the ready during the roller-coaster ride of the Cold War so as not to be utterly dependent on Washington's actions. Moscow tried for a time to include British and French nuclear forces in the Strategic Arms Limitation Talks, but dropped the effort. The most significant potential source of contention with a major power for the UK was resolved with London's 1984 agreement with Beijing to transfer Hong Kong. This accord, which was reached during an intense period of superpower tensions, was finalized in 1997.

Given extenuating circumstances and budget constraints, Paris and London remained largely immune from the action-reaction syndrome. Finite deterrence provided a sense of status along with sunk costs; recapitalization costs, as in other countries with sluggish economies, will likely come at the painful expense of conventional military capabilities. The UK and France have not seemed overly concerned by a sense of deterrence instability from the modest pace of China's strategic modernization programs or from the Kremlin's revanchist tendencies. These conditions lend support for maintaining nuclear capabilities, but not for competing with Beijing or Moscow.

The most remarkable case of avoiding the pitfalls of the action-reaction syndrome and accepting disparities in nuclear capabilities has — so far — been China. Beijing was content with minimum nuclear deterrence during the Cold War when faced with not one but two superpower adversaries. Acceptance of

nuclear disparity against a stronger foe still did not provide for deterrence stability, as was evident when China fought a very confined border war with the Soviet Union in 1969, shortly after it acquired rudimentary nuclear capabilities. These skirmishes along the Ussuri River provided a foretaste of another limited war between two newly armed nuclear-weapon states 30 years later. But unlike the Kargil conflict between Pakistan and India, which added impetus to their nuclear programs, Beijing continued to adhere to a very relaxed pace of strategic modernization even after the Sino-Soviet clash. Economic duress, domestic turmoil, and then a remarkable period that focused on economic development might help explain Beijing's uncommon restraint over a period of decades. For whatever reason, Chinese leaders have so far remained immune from Cold War nuclear orthodoxy.

Beijing still officially adheres to its nuclear doctrine of no first use, and continues to rely on strategic forces that project retaliatory rather than war-fighting capabilities. China has relied on basing modes for its long-range missiles that provide assurance against preemption, and, after an exceptionally long gestation period, it has now begun serial production of second-generation nuclear-powered submarines armed with new long-range sea-based ballistic missiles. The flight-testing of techniques suitable for the placement of multiple warheads atop ballistic missiles has reportedly begun, five long decades after the first Chinese nuclear test.[14] The extent and pacing of these deployments will provide indicators as to whether Chinese leaders are changing their deterrence requirements.

Deterrence stability between the United States and China has never been a given. The Korean War provided the first graphic lesson that the Bomb did not trump an adversary's conventional order of battle and regional security interests. China was on the receiving end of nuclear threats by the United States, especially during the Truman and Eisenhower administrations, which helped propel Beijing's nuclear weapons program. Presidents Eisenhower and Kennedy sparred with Beijing over offshore islands whose names — Matsu and Quemoy — have long been forgotten. The United States and China seemed quite capable of coming to blows over Taiwan until the thaw in Taiwan-mainland relations. Over the past decade, Washington has focused with good reason on potential challenges from Beijing in the global commons of sea and space. Disputes over islands and rock outcroppings between China and its neighbors could also lead to military incidents and crises.

Deterrence stability between Washington and Beijing has been reinforced by significant economic interdependencies — a factor entirely absent in US-Soviet competition. The gap between Washington and Beijing's nuclear capabilities

remains great, but this in itself does not ensure deterrence stability, as was evident in the Sino-Soviet border clashes. More helpful in this regard is Beijing's apparent commitment to basing modes for its land- and sea-based deterrents that are aligned with its declared doctrine of no first use of nuclear weapons in a crisis, confrontation, or war. Chinese leaders can, however, change their nuclear doctrine as their strategic capabilities advance. Severe crises between Washington and Beijing could also ratchet up strategic modernization programs, as could significant increases in forward-based and national US missile defense programs.

To date, China and India have adopted similar nuclear postures. Both have issued no first use declarations, both have focused on economic metrics of national influence, and both have acted in ways that seem to reflect appreciation for the limited utility of nuclear weapons to achieve national goals.[15] These parallel nuclear postures are all the more remarkable because Beijing and New Delhi fought a limited war over a long-standing border dispute that flares periodically as a result of encroachment by border patrols. Unlike the India-Pakistan border dispute over Kashmir, however, India and China do not exchange fire when encroachments occur.

The continued strategic restraint of these two rising powers is far from assured. China and India have not tried hard to resolve their border dispute in the past, and overlapping interests could produce friction elsewhere, particularly at sea. Parallel nuclear modernization programs continue, albeit at a modest pace. Both rising powers are moving toward multiple warheads atop some of their ballistic missiles and are contemplating limited ballistic missile defense capabilities. The nuclear superpowers reached this critical juncture in the late 1960s. The advent of MIRVs and greater accuracy facilitated prompt, hard-target kill capabilities, greatly diminishing prospects for deterrence stability between the superpowers, even without national ballistic missile defenses.

MIRV and missile-defense technologies now beckon for Beijing and New Delhi. Will they follow in the footsteps of Washington and Moscow, albeit at a much more modest scale and pace? At every crucial juncture in the past — after the India-China border war in 1962, after China tested atomic and hydrogen bombs in 1964 and 1967, when New Delhi tested a nuclear device in 1974 and acquired nuclear weapon capabilities in the late 1980s, and then in 1998, when New Delhi tested these devices — Indian and Chinese leaders have chosen not to emulate the nuclear superpowers.

The advent of technological capabilities for MIRVs and missile defenses are likely to increase the pace and scope of the nuclear competition between China and India. The extent of this increase would depend on the extent of deployments. National missile defenses for both countries are an unlikely and hugely expensive prospect; even limited defenses of a few major cities pose immense technical challenges while diverting funds from other military projects with stronger constituencies. Multiple warheads atop ballistic missiles would ratchet up numbers, but might be limited in number and need not connote nuclear-war-fighting capabilities unless accompanied by other accoutrements, including increased missile accuracy and doctrinal changes embracing counterforce targeting.[16]

The key determinant of deterrence stability between China and India remains whether they can successfully manage or resolve their border dispute while growing bilateral trade and investment. If Asia's rising powers remain on this path, perturbations related to the measured growth of their nuclear capabilities can be managed. Since 1962, Beijing and New Delhi have demonstrated that the avoidance of a border war is mutually preferable, and possible, while in the last decade bilateral trade has grown appreciably. In the future, China and India might become another very hard case of deterrence instability, but this seems avoidable. For now, India and Pakistan provide the most prominent demonstration of the chimerical pursuit of deterrence stability between nuclear-armed rivals.

## Deterrence Instability on the Subcontinent

The strategic competition on the subcontinent is in many respects unique. India and Pakistan have a long-standing border dispute. They have fought wars, including a limited war shortly after both carried out underground nuclear tests in 1998. India has used military force to carve up Pakistan. Pakistan has used unconventional warfare to tie down and punish Indian forces and noncombatants in Kashmir. Violent extremist groups based in Pakistan have carried out spectacular acts of terrorism in New Delhi, Mumbai, and other Indian cities. Pakistan is the only nuclear-armed state that does not have a monopoly on the use of force within or across its borders.[17] Some of the violent extremist groups based in Pakistan are now acting autonomously and in opposition to the organs of the state that once nurtured them.

The United States and the Soviet Union were unable to stabilize their nuclear competition in the absence of complicating factors such as these. Nor did the superpowers succeed in stabilizing their nuclear competition during brief periods

of détente. The periods of détente between India and Pakistan have also been short-lived. National leaders on the subcontinent rarely seek reconciliation; the wounds of partition remain raw and are easily salted. Pakistani political leaders cannot take the lead in resolving contentious bilateral issues because they do not wish to be labeled as supplicants and because they will be badly weakened by failure. Even when they follow Indian leaders who seek normal ties, Pakistan's civilian leaders can expect significant domestic challenges. Furthermore, India rarely leads. New Delhi is wary of pursuing reconciliation that ends abruptly with spectacular acts of terrorism on Indian soil or, as in the heights over Kargil, dangerous military brinkmanship. Indifference toward Pakistan has become a default position for many in India — until a crisis occurs.

As was the case during the Cold War, conventional force imbalances challenge deterrence stability in South Asia. Disparities in air and naval power are growing between India and Pakistan, and will also grow over time with respect to ground forces.[18] As was the case during the Cold War, stabilization between India and Pakistan has been foiled by crises, worrying military developments, disparate conventional capabilities, and incongruent national fortunes. The superpower nuclear competition was about ideology and geopolitics. The India-Pakistan nuclear competition is about religion, inheritance, geography, and regional security, as well as subconventional and limited conventional warfare. As hard as it was for the United States and the Soviet Union to stabilize their nuclear competition, it will be harder still for India and Pakistan — even though they are competing modestly in comparison to the nuclear superpowers.

The quest for deterrence stability on the subcontinent is further complicated by a third party, China, which helps Pakistan counterbalance India. While Rawalpindi measures its strategic requirements against India, New Delhi calculates its requirements against both its nuclear-armed neighbors. Conceptually, stabilization is conceivable when two sides of a triangular competition are roughly equal in national power and the third, least-powerful side remains equidistant from the stronger contestants. It is also possible to conceptualize a stabilized triangular competition when the added power of two sides roughly equals that of the third. Even then, stabilization would require roughly equivalent strategic modernization programs, conventional capabilities, and national fortunes. These requirements are daunting, which helps explain why triangular nuclear competitions are harder to stabilize than bilateral ones — and the triangular competition in southern Asia does not begin to meet these stabilizing conditions.

Triangular nuclear competitions are not novel. The most prominent prior case — the United States, the Soviet Union, and China during the Cold War — featured nuclear collusion and then antagonism between the Soviet Union and China, after which China effectively dropped out of the competition. Another triangular competition is emerging among the United States, China, and Russia. Russia is helping China to compete, even though Moscow understands that ultimately Beijing is likely to pose as much of a future strategic concern as the United States. Shifting allegiances during the Cold War affected strategic fortunes without enhancing deterrence stability; instead, these shifts placed greater burdens on deterrence.

In southern Asia, shifting allegiances seem unlikely. China and Pakistan will remain "all-weather friends," with Beijing picking up some of the slackening US-Pakistan relationship — including arms sales — as Washington gravitates more toward New Delhi. China-India relations, on the other hand, will remain competitive alongside growing trade and investment, with India enlisting the United States and Russia to help with arms sales. Pakistan's side of the triangle will shrink along with its social cohesion and economic performance, while the Chinese and Indian sides will lengthen, though unevenly. This geometric construction does not lend itself to deterrence stability because the three sides have unequal national power, because the most and least powerful states line up against the middle power, and because two of the sides might engage in conflict if India again experiences dramatic acts of terrorism that can be traced back to Pakistan.

These unstable dynamics preceded the induction of nuclear weapons on the subcontinent, and were reinforced soon afterward. Immediately after India and Pakistan both tested nuclear devices in 1998, a sense of optimism pervaded official statements and strategic commentary. Prime ministers A. B. Vajpayee and Nawaz Sharif sought to assuage international concerns by declaring adherence to minimum requirements for credible deterrence — a concept championed by Western arms controllers and completely disregarded by US and Soviet deterrence strategists. In a statement delivered to the Indian Parliament on May 27, 1998, Prime Minister Vajpayee declared, "We do not intend to engage in an arms race."[19] In his first interview with a Western newspaper, Vajpayee reinforced and expanded on this assurance, saying, "We have no intention of engaging in a nuclear arms race and building huge arsenals as we have seen other nuclear weapons states do, because their doctrines were predicated on nuclear war."[20] Writing in *Foreign Affairs*, Jaswant Singh, then a senior adviser to Vajpayee, elaborated further, pledging that India would not "subscribe to or reinvent the sterile doctrines of the Cold War."[21]

Pakistan Prime Minister Nawaz Sharif made his first statement after the 1998 tests in Urdu, assuring his countrymen that Pakistan had "settled a score" while blocking Indian designs. Sharif also offered assuring messages to international audiences, promising, "We are prepared to resume Pakistan-India dialogue to address all outstanding issues, including the core issue of Jammu and Kashmir, as well as peace and security. These should include urgent steps for mutual restraint and equitable measures for nuclear stabilization."[22] In a subsequent article prepared for *Foreign Affairs*, Pakistan Foreign Secretary Shamshad Ahmad wrote that "it is in both sides' fundamental interest to avert a nuclear arms race."[23] Singh, then India's external affairs minister, similarly told *The Hindu* on November 29, 1999, that "India will not engage in any arms race. We shall not, therefore, pursue an open-ended program."[24]

These optimistic projections were reinforced by outside analysts who foresaw a relaxed competition that offered the prospect of offsetting, stabilizing nuclear postures. Ashley Tellis, who has written about the strategic dynamics of the subcontinent at considerable length and depth, predicted an "arms crawl" rather than a vigorous nuclear arms competition between India and Pakistan.[25] Many other leading strategic analysts in both countries were just as optimistic. Soon after the 1998 tests, retired Air Commodore Jasjit Singh predicted that

> [I]t is difficult to visualize an arsenal with anything more than a double-digit quantum of warheads. It may be prudent even to plan on the basis of a lower end figure of say 2-3 dozen nuclear warheads by the end of 10-15 years.[26]

Likewise, before the tests, Air Chief Marshal Zulfikar Ali Khan postulated that "Even the possession of a few nuclear weapons will provide Pakistan, still a relatively small player in regional terms, with a strategic equalizer against the conventional superiority of India and a countervailing deterrent against its nuclear arsenal."[27]

Within a year of testing nuclear devices in 1998, optimistic appraisals of deterrence stability began to wane. Pakistan Army Chief Pervez Musharraf and a small circle of generals responded to a conciliatory visit to Lahore by Indian Prime Minister Vajpayee with a misconceived gambit to seize the high ground across the Kashmir divide. The resulting Kargil War in 1999, followed by the 2001-2002 "Twin Peaks" crisis (sparked by a brazen attack against the Indian Parliament building by extremists based in Pakistan), shook the foundations of nuclear minimalism. These events clarified beyond doubt that the advent of nuclear weapons would not usher in a new era of deterrence stability. Instead,

risk-taking by Pakistan lent credence to another construct of Western deterrence strategists — the stability-instability paradox.[28] One of the first to anticipate the downside risks of offsetting nuclear deterrents was Glenn Snyder, who accurately predicted disconnects between nuclear deterrence and stability by observing that "a range of minor ventures" might be undertaken with impunity under the nuclear threshold.[29] Likewise, Robert Jervis wrote, "To the extent that the military balance is stable at the level of all-out nuclear war, it will become less stable at lower levels of violence."[30]

Jervis' presumption of a stable military balance "at the level of all-out nuclear war" was overly generous, since neither superpower equated nuclear overkill with stability. Instead, growing increments of nuclear capability were perceived to be associated with war-fighting plans, which exacerbated instabilities related to conventional force imbalances and deeply held grievances. The stability-instability paradox reappeared on the subcontinent with a new feature — subconventional warfare. Pakistan's military and intelligence services heated up a proxy war across the Kashmir divide after helping to drive Soviet troops out of Afghanistan and when covert nuclear capabilities were in hand. The 1999 Kargil War followed hot tests of nuclear devices. Dramatic acts of terrorism directed against iconic targets in major Indian cities added elements to the stability-instability paradox that were entirely unanticipated by Western deterrence strategists.

Chastened by their inability to respond quickly to the incursion above Kargil and to dramatic acts of terrorism emanating from Pakistan, Indian military leaders took a hard look at force mobilization and structure. The Indian army proposed ways to mobilize more quickly; defense bureaucrats and political leaders balked; and the army, air force, and navy continued to go their own ways. But Pakistan's military planners took seriously India's aspirational goals for ground campaigns to punish Pakistan quickly after grievous acts of terrorism, before international crisis management could be employed. In order to offset Indian conventional power, Rawalpindi embraced short-range nuclear-capable systems.

Optimistic Indian and Pakistani estimates of deterrence stability and nuclear minimalism were soon amended with qualifiers. Jaswant Singh clarified that nuclear requirements could not be viewed as a "fixity;" instead it was a "variable," dependent on technological developments and threat levels.[31] The August 17, 1999 "draft report" of India's nuclear doctrine from the National Security Advisory Board, publicly released by National Security Advisor Brajesh Mishra, linked the formulation of "credible minimum nuclear deterrence" to the possession of "effective, enduring, diverse, flexible and responsive" capabilities.[32] A trio of well-connected Pakistani strategic analysts — including Zulfikar Ali

Khan, who prior to the 1998 tests defined requirements in minimalist terms — concluded that the practical result of India's draft doctrine would be "a massive expansion" of strategic capabilities "in the guise of 'credible minimum deterrence.'" The three authors concluded that "Obviously, our deterrence force will have to be upgraded in proportion to the heightened threat of preemption and [ballistic missile] interception."[33]

The subsequent pursuit of credible deterrence between these two mismatched adversaries was destabilizing, even though it was less unequal than might be expected. Pakistan's nuclear programing was methodical and purposeful, reflecting its control by military officers who took nuclear requirements seriously. Faced with the projection of growing conventional force imbalances, the military stewards of Pakistan's nuclear arsenal naturally focused on credibility, not minimalism. The infrastructure is now in place for open-ended, steady, incremental growth in Pakistani nuclear capabilities.

Increases in India's nuclear arsenal have proceeded at a leisurely pace relative to production capacity, reflecting a program overseen by political leaders and civil servants who view nuclear weapons in political rather than military terms. Dysfunctional habits in India's civil service, military, and defense technology sectors have proven hard to break. Overly ambitious plans championed by defense scientists experienced extended bottlenecks while political leaders seemed genuinely disinterested.[34]

As Pakistan punched above, and India punched below, their respective weight classes, a vigorous nuclear competition ensued with familiar political, military, and technical dynamics. What happened on the subcontinent during the first 15 years of overt nuclear deterrence was a scaled-down version of the Cold War competition between the United States and the Soviet Union. A relatively relaxed Indian and relatively concerted Pakistani nuclear interaction generated flight-testing of no less than 17 new types of ballistic and cruise missiles between 1998 and 2013.[35] Both countries are now in the process of supplementing ballistic missiles with cruise missiles. Both are publicly committed to a triad of land-, air-, and sea-based nuclear-deterrent capacity. India's first indigenously built nuclear-powered submarine is undergoing sea trials.

Deterrence stability has been weakened on the subcontinent with offsetting increments of nuclear capability. These dynamics have been explored in depth and are now thoroughly familiar.[36] There are no signs of a plateau in Pakistani and Indian nuclear requirements, and much evidence of a continued competition.

Familiar domestic, political, and institutional impulses to compete are present, and new technologies beckon.[37] Strategic anxieties will continue to be fueled by asymmetric conventional military capabilities and force structure. Other exacerbating factors mentioned above — triangular competitive dynamics, disputed borders, a history of limited conventional and subconventional warfare, as well as the potential for nuclear-tinged crises on the subcontinent — remain present.

The interactive features of this nuclear competition belie the promise of stability that nuclear weapons were once thought to offer. The competition continues and is picking up momentum. Neither side feels it can afford not to compete, since a relaxed view of the competition might be perceived as a sign of weakness and an invitation to adventurism. For Pakistan, this calculation applies only to India. For India, it applies to both Pakistan and China.

## Stabilizing Mechanisms for Southern Asia

This essay argues that deterrence stability is feasible only when nuclear-armed states have little or nothing to fight about, when they address their security concerns through diplomatic means, when they agree to set them aside, or when one of the rivals collapses. One of these pathways to deterrence stability — setting aside disputes while normalizing ties via bilateral trade and investment — has been pursued by China and India. This pathway, however, can be derailed by increased friction along their disputed border, and undermined by strategic modernization programs.

A resolution of the disputed India-China border awaits bold leadership. Lethargic talks between Indian and Chinese officials have been held since Rajiv Gandhi's meeting with Deng Xiaoping in Beijing in 1988. Subsequent leaders in both countries have been content to play a long game rather than to make evident trade-offs. Inconclusive high-level discussions have now been accompanied by headline-generating (in India, not China), overaggressive patrolling along the disputed border.

Chinese and Indian leaders have agreed to significantly increase direct trade while deferring settlement of their border dispute — a course of action that Chinese President Jiang Zemin urged Pakistanis to pursue with regard to Kashmir in a December 1996 speech before Pakistan's National Assembly, without success.[38] Trade provides a basis for normalization over time, but will occur alongside the growth of nuclear capabilities. Deterrence stability would be improved by a nuclear dialogue that Chinese leaders resist. New Delhi would be willing to engage in discussions leading to confidence-build-

ing measures (CBMs) and NRRMs, but not in the role of a demandeur who is rejected or as a supplicant.

Despite the projected growth of nuclear capabilities and the absence of substantive dialogue on nuclear issues, it remains possible for Beijing and New Delhi to establish conditions for deterrence stability by means of speeding up the timetable for a border settlement or deferring its resolution while continuing to increase bilateral trade and investment. Much, however, depends on the pace and scope of their strategic modernization programs, especially their commitment to MIRVs and counterforce targeting, and whether they deploy missile defenses (discussed below).

Pathways to deterrence stability between India and Pakistan seem remote. Prospects for a resolution of the Kashmir dispute or mutual agreement to set this issue aside appear modest, at best. Diplomatic choreography to normalize ties between India and Pakistan has been as difficult as with US-Soviet relations. When one leader appears willing or strong enough to try, the other is typically reluctant or weak. Windows for pursuing a resolution of the Kashmir issue or agreeing to set this issue aside have been rarely open, and soon closed, by explosions carried out by groups linked to Pakistan's military and intelligence services and by domestic political pressures.

New Delhi has deemed as untrustworthy those military governments in Pakistan that are strong enough to reach or publicly defer a Kashmir settlement, while viewing weak civilian Pakistani governments as not befitting heavy diplomatic investment. Kashmir remains a significant political issue in Pakistan. Since 2013, periodic firing along the Line of Control dividing the old Princely State has replaced an almost decade-long moratorium. Stephen Cohen aptly concluded that "India cannot make peace. Pakistan cannot make war."[39] The reverse is no less true: India cannot make conventional war except on a very limited scale, and Pakistan cannot make peace with India until military leaders decide that their country's fortunes depend on it. Under these circumstances, instability seems endemic to the India-Pakistan relationship.

Pakistan's demise could lead to deterrence stability, but only at the cost of greatly increased nuclear dangers associated with theft, nuclear terrorism, and unauthorized military use of nuclear weapons. Pakistan faces sustained and systemic economic weaknesses, even though it possesses a well-functioning, black economy. Economic collapse seems unlikely, but absent fundamental reforms, including revenue generation, Pakistan's economic indicators will continue to be anemic. Pakistan's military leaders understand that their country cannot be

strong if their society is riven with divisions, social services and educational opportunities are diminishing, foreign direct investment is dwindling, and economic indicators fall behind population growth. Nonetheless, the military's share of the national budget continues to be outsized, and roughly equal in percentage terms to the Soviet military's share of the national budget prior to the dissolution of the Soviet Union.[40]

While bureaucratic, institutional, and political constraints within India have been important moderators of the nuclear competition, checks and balances on Pakistani military expenditures — and even more so, on nuclear-weapon-related expenditures — are weak. The defense budget is not scrutinized in detail by legislators, and few would dare suggest cuts in outlays for national security. No information has been published on the nuclear budget. The stewards of Pakistan's nuclear arsenal argue that sunk costs have not been substantial and that nuclear expenditures constitute a small fraction of the defense burden.

Very few Pakistani commentators offer critiques of Pakistan's commitment of resources toward nuclear weapons and their means of delivery. To do so could run afoul of the authorities and could be subject to stinging rebuttal, as possession of the Bomb is widely viewed as a source of national prowess and pride. If domestic brakes are applied to the nuclear competition, it will most likely be because of more pressing military needs or because Pakistan's economic decline and the perceived need to assuage domestic discontent curtails defense spending across the board.

Conceptually, treaties to limit the most unsettling nuclear and conventional military capabilities could ameliorate security concerns in southern Asia. A negotiating process toward these ends could also increase mutual understanding, build confidence, and provide a degree of transparency necessary to reach more ambitious agreements. The nuclear superpowers went down this path and achieved much of value. These arms limitation treaties did not, however, succeed in codifying deterrence stability, because they were accompanied by modernization programs authorized to alleviate concerns raised by diplomatic engagement and to strengthen the hands of negotiators. The result was an eventual capping of nuclear force structure alongside further refinements of counterforce capabilities. It was not until the advent of two unorthodox leaders, Ronald Reagan and Mikhail Gorbachev — the latter facing grave economic and societal problems — that the superpower nuclear arms competition was broken and deterrence stability achieved.

Trilateral or bilateral treaty arrangements are an unlikely pathway to deterrence stability in southern Asia. China, India, and Pakistan are unequal in strength and national capacity, and likely to remain that way. Deterrence stability also requires transparency, and all three nuclear-armed states in southern Asia are neuralgic about transparency measures. They do not possess equal "national technical means" to monitor agreed constraints, nor are they likely to rely on outsiders to monitor compliance with arms-control compacts. Two multilateral treaties already negotiated could help with deterrence stability in southern Asia, but India and Pakistan are not ready to sign and ratify the Comprehensive Test Ban Treaty, and Pakistan continues to veto the start of what might well be prolonged negotiations for a Fissile Material Cut-off Treaty.

As deterrence instability grows alongside nuclear capabilities, CBMs, transparency measures, and NRRMs could help India, Pakistan, and China to improve ties and demonstrate responsible nuclear stewardship. These measures could also provide modest offsets to deterrence instability in the absence of treaties and serious, sustained efforts to resolve disputes. CBMs and NRRMs proved their worth in US-Soviet relations, opening channels of communication, establishing habits of cooperation, clarifying — and to some extent preventing — dangerous military practices, and increasing transparency in stabilizing ways. Nonetheless, CBMs and NRRMs will not provide a safety net for deterrence stability during serious crises. Instead, US crisis management has provided this safety net in past crises.

Chinese, Indian, and Pakistani leaders have not seriously pursued CBMs and NRRMs to mitigate deterrence instability. Agreements between India and Pakistan have been few in number, often reached after crises to mollify foreign audiences. Since the early 1990s, the record of negotiating new CBMs and NRRMs has been sparse. In 2005, the Agreement on Pre-Notification of Flight Testing of Ballistic Missiles was finalized, followed two years later by the Agreement on Reducing the Risk from Accidents Relating to Nuclear Weapons, for which protocols have yet to be enumerated. No bilateral military-related CBMs and NRRMs have been finalized since the 2008 attacks in Mumbai. Beijing has yet to deign to negotiate NRRMs with New Delhi.

The most promising way to address deterrence instability, absent a mutual commitment to resolve disputes, is through tacit agreements. The most important tacit agreement that could be reached is not to play with fire in extremely sensitive locales. For example, the nuclear superpowers reached tacit understandings not to change the status quo in Berlin or in Cuba after extremely dangerous crises. Tacit agreements can also lead to formal accords; Washington and Moscow

tacitly agreed to accept the division of Europe into two blocks during the Cold War, which was subsequently codified in the 1975 Helsinki Final Act.

The most important tacit agreement available to China and India would be to dispense with provocative patrolling along their disputed border. The most important tacit agreement that India and Pakistan could reach relates to refraining from inserting or supporting militants in Kashmir and Balochistan. Tacit agreements not to play with fire in these disaffected regions would still not reduce the risk of conflict if jihadi groups based in Pakistan were to carry out spectacular acts of terrorism against iconic Indian targets outside of Kashmir. India and Pakistan could share intelligence regarding extremist groups — agreed to in principle but poorly implemented in practice — which could help prevent nuclear-tinged crises and military clashes.

Tacit agreements are also possible with respect to nuclear-weapons-related programs. India and China will most assuredly continue to increase their nuclear arsenals. As noted above, the pacing and scope of these increments, particularly with respect to MIRVed missiles, as well as doctrinal changes away from no first use and toward war-fighting capabilities, will help determine how much deterrence instability is engendered by advancing technological capabilities. The absence of limited national ballistic-missile deployments could have a dampening effect, but as was evident in the US-Soviet nuclear competition, deterrence instability could grow because of strategic modernization programs even if national missile defenses are limited or absent. If limited national missile defenses are deployed alongside offensive upgrades, the level of deterrence instability between China and India will grow further.

It might be possible for Beijing and New Delhi to arrive at separate but mutually reinforcing national decisions that deploying limited national missile defenses are not worth their expense. If this is not possible, then tacit agreements to constrain missile defense deployments could also help.[41] As for the deployment of MIRVs, the resulting increase in deterrence instability would be greatly compounded if Beijing and New Delhi decided to pursue improvements in missile accuracy and embrace counterforce targeting — both well within their technological capabilities. A tacit agreement not to invest in nuclear war-fighting capabilities and to adhere to well-established, nonoffensive nuclear postures could dampen deterrence instability amid strategic modernization programs. Conversely, if Beijing and New Delhi move on to counterforce targeting, they will greatly compound issues of deterrence instability.

China and India have ample resources for the growth of their nuclear capabilities. Pakistan does not. The wisest choice of the weakest competitor, as the Soviet Union demonstrated during the Cold War, is not to engage in a nuclear competition. Pakistan will fall further and further behind in a nuclear competition with an India that is more inclined to compete. Rawalpindi could, however, decide to invest even more in infrastructure for fissile-material production and production lines — but even this would not alter prospective disparities in nuclear capabilities with India. MIRVs and counterforce capabilities for longer-range systems are not an option for Pakistan, nor are ballistic missile defense deployments.

For Pakistan, as a state with profound internal and economic weaknesses, it is essential that its military leaders wrestle with the question of how much nuclear capability is enough against a major power. Because of prior investments, Pakistan's nuclear arsenal will continue to grow, and it may exceed the arsenals of the UK and France. This growth will greatly increase deterrence instability to the extent that the stewards of Pakistan's nuclear arsenal decide to place nuclear weapons at sea or along the forward edge of potential battlefields.

Even if Pakistan were to decide to reduce its expenditures for nuclear weapons and their delivery vehicles, or to voluntarily drop out of its nuclear competition with India, deterrence stability will remain elusive if relations remain deeply adversarial. Whatever the size of Pakistan's nuclear arsenal, deterrence stability will be elusive unless Pakistan's military leaders endorse normal relations with India. This would entail resolving or publicly setting aside the Kashmir dispute and opening up direct trade and investment. As long as a settlement or deferment of the Kashmir issue is unlikely, and as long as jihadi groups that can carry out sophisticated terrorist acts against India remain in place, the subcontinent will face conditions of significant deterrence instability.

## Conclusion

This essay has argued that deterrence stability is elusive when nuclear-armed states have security dilemmas that could lead to warfare, especially when these dilemmas are heightened by imbalances in conventional military capabilities. Confidence in the sufficiency in nuclear deterrence against another nuclear-armed state is achievable only in cases where these pairings have very little, if anything, to fight about or when one of the contestants collapses. Conversely, nuclear-armed rivals engaged in an interactive nuclear competition alongside disparities in conventional forces will find the quest for deterrence stability to be chimerical. The more offsetting nuclear capabilities grow under these circum-

stances — especially when rivals with serious security concerns embrace counterforce targeting — the harder it will become to realize deterrence stability.

The United States and the Soviet Union were unable to achieve deterrence stability during the Cold War, even when their nuclear arsenals grew to massive proportions. India and Pakistan are also unlikely to achieve deterrence stability by means of nuclear modernization programs. Instead, added increments of nuclear capabilities will result in less security unless national leaders resolve their disputes or agree to set them aside in order to normalize ties. China and India might be able to achieve deterrence stability by setting aside their border dispute and increasing cross-border trade and investment. This pathway is, however, far from assured, and can be impeded by nuclear modernization programs.

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# THE CREDIBILITY OF INDIA'S NUCLEAR DETERRENT

*Manoj Joshi*

Two aspects of Indian nuclear doctrine are increasingly questioned — New Delhi's commitment to no first use (NFU) and massive retaliation — even though India has been slowly but steadily strengthening its arsenal of nuclear weapons. Indian missiles are developing a longer reach, and India's first ballistic missile submarine will be commissioned soon, albeit initially with missiles of a limited range. The overwhelming victory of the Bharatiya Janata Party (BJP) in the 2014 general election, after running on a manifesto that called for revisions and updates to India's nuclear doctrine "to make it relevant to challenges of current times," has heightened interest in whether Indian nuclear doctrine might indeed change.[1]

This essay analyzes four dynamics that drive Indian domestic debate — the need to revise the doctrine, poor political leadership of national security and its effects on nuclear command and control, civil-military relations, and domestic perceptions of security. It concludes with an important paradox: although India remains quite secure, it might respond to concerns about the credibility of its nuclear deterrent in counterproductive ways.

## Antecedents

Following the nuclear tests of May 1998, the government of India released limited summations of its nuclear doctrine in 1999 and 2003, announcing that it would be built around "credible minimum deterrence," and that it would adhere to the principle of NFU.[2] In April 2014, the BJP's election manifesto floated the idea of revising this long-standing doctrine. In view of the BJP's election manifesto in 1998, which presaged nuclear testing, the 2014 manifesto generated considerable attention in promising to study India's nuclear doctrine "in detail" and "revise and update it to make it relevant to challenges of current times." The manifesto went on to add that the BJP was committed to maintaining a "credible minimum deterrent" that was "in tune with changing geostrategic realities," clearly leaving the door open for future change.[3]

Immediately following the release of the manifesto, however, BJP prime ministerial candidate Narendra Modi declared in an April 2014 interview that "No first use was a great initiative of Atal Bihari Vajpayee — there is no compro-

mise on that. We are very clear. No first use is a reflection of our cultural inheritance."[4] Then, on the eve of Prime Minister Modi's August 2014 visit to Japan, with whom India wished to negotiate a civil nuclear deal, Modi offered a carefully nuanced position to a group of Japanese journalists, saying: "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."[5]

Yet another nuance can be picked up from a speech made by the new National Security Advisor (NSA) Ajit K. Doval in October 2014 to the 6th Munich Security Conference Core Group in New Delhi, where he said "that India is shifting its posture from credible minimum deterrence to credible deterrence."[6] As the NSA, Doval heads the executive council of India's national Nuclear Command Authority.

The BJP has long been an advocate of muscular nationalism, and seems set now to be guiding India's destiny for the foreseeable future. The party may also be reflecting concerns within sections of India's strategic community, which include members of the armed forces, that India's nuclear deterrent and doctrine may no longer be viewed as credible.

Some circles within India do not believe that the country has a rugged and credible nuclear force that can survive a nuclear first strike and retaliate with certainty.[7] Nor do they believe that if Pakistan uses a singular nuclear detonation for signalling purposes, a massive retaliatory response is likely or, indeed, in India's security interest. Much has happened since the last, abbreviated public summation of the Indian nuclear doctrine was issued in January 2003.

India's dilemmas regarding the credibility of its deterrent threats arose soon after the 1998 tests in the wake of the Kargil War. Rawalpindi's use of the "nuclear overhang" to pursue its revisionist foreign policy agenda led military and political leaders like Army Chief General V. P. Malik and Defence Minister George Fernandes to articulate the need to be ready to fight a limited war under this overhang. Delays in mobilization in response to the Parliament House attack in 2001 exacerbated concerns over credibility, leading some to advocate a Cold Start doctrine in 2004 to punish Pakistan through rapid, limited conventional responses.[8]

Cold Start was never implemented, as was evident by the lack of an Indian military response in the wake of the November 2008 Mumbai attacks. Nonetheless, Pakistani military strategists, working on the assumption that their deterrent

needed strengthening, began testing short-range missiles, advertised as being capable of carrying low-yield nuclear weapons, to target Indian military formations trying to break through into Pakistan.

Another destabilizing element has been India's flight-tests of ballistic missile defense (BMD) interceptors. Despite extravagant claims by the Defence Research and Development Organisation, at present such systems might have a degree of efficacy only against shorter-range ballistic missiles.[9] While there has been no indication that even limited BMD will be deployed, let alone adequately tested, the prospect of such deployments has added impetus to the expansion of Pakistan's nuclear arsenal.

A third issue creating turbulence is the complete lack of any kind of discussion between India and Pakistan over their respective force postures and nuclear doctrines. India may offer a universal NFU pledge, but Pakistan's doctrine is India-specific and has a first use option aimed at blunting India's conventional military capabilities. While the two sides have a number of confidence-building measures in place to reduce the risk of conventional conflict, they have little or no transference to the nuclear weapons standoff. In February 1999, the two sides had agreed through the Lahore Declaration to "take immediate steps for reducing the risk of accidental or unauthorised use of nuclear weapons and discuss concepts and doctrines with a view to elaborating measures for confidence building in the nuclear and conventional fields, aimed at prevention of conflict." However, little has occurred by way of implementing this understanding since then.[10]

The bottom line is that although the Indian nuclear arsenal and missile capabilities have grown, New Delhi has found itself self-deterred from undertaking even limited conventional responses to Pakistan-backed terrorist activity, such as the attack on India's Parliament in 2001, the Mumbai commuter train blasts of 2006, or even the Mumbai assault of 2008, where there was clear evidence of official Pakistani complicity. India has learned hard lessons about the limited utility of nuclear weapons. While useful in deterring the use of such weapons by adversaries, nuclear weapons have not deterred a limited war like that in Kargil in 1999, or prevented crises such as the 2001-02 "Twin Peaks" crisis, when India and Pakistan mobilized their armies in the wake of the terrorist attack on the Indian Parliament, let alone the "subconventional" Pakistani offensive.

The combination of factors listed above has led to the questioning of India's nuclear doctrine across a wide spectrum of opinion. Former Indian Foreign Minister Jaswant Singh, who helped articulate key tenets of India's nuclear policy in the early 1990s, argued before the Lok Sabha in 2011 that "the situation that

warranted the enunciation of [the current nuclear doctrine] … has long been overtaken by events." He added, "You cannot continue to sit in yesterday's policy."[11] Rajesh Basrur, who has in the past supported minimal nuclear deterrence, has raised questions relating to what is "credible," suggesting another review of requirements.[12] Manpreet Sethi observed that Pakistan doubted not Indian capability "but its political will in mounting retaliation."[13]

Doubts have clearly arisen within government, as well. Writing in *Force* magazine in June 2014, former Strategic Forces Commander Lt. Gen. (ret.) B. S. Nagal spoke of the need for "a dispassionate and critical evaluation of the [nuclear] doctrine." He then expressed support for some elements, including the concept of a "credible minimum deterrent." But in his view, NFU was problematic and virtually tantamount to inviting "large scale destruction in own country." Instead, Nagal called for a doctrine of ambiguity, covering the range from possible "first use, to launch on warning, launch on launch and NFU."[14] A former official, P. R. Chari, who is an advocate of normalization of ties between India and Pakistan, has suggested that perhaps "India's commitment to a no first use posture has encouraged Pakistan to adopt its present adventurist strategy." He has also laid out other limitations such as its failure to address the issue of non-state actors.[15]

Another important issue critics have raised is the credibility of the Indian commitment to massive retaliation against what could well be a one-off and limited strike by a low-yield weapon against Indian forces on Pakistani soil.[16] In April 2014, as Indian general elections got underway, Satish Chandra, the former deputy to the NSA who had worked for the BJP-led government from 1999 to 2004, noted that "an important element behind the call for revisiting our nuclear doctrine emanates from a lack of confidence in our deterrent and in our willingness to resort to the use of nuclear weapons in a massive second strike in response to an attack on us with tactical weapons."[17]

The draft nuclear doctrine unveiled by the BJP-led government in 1999 spoke of "punitive retaliation" and "unacceptable damage" to an attacker. The official policy announced in January 2003 said that India's retaliation to "a first strike will be massive and designed to inflict unacceptable damage." It also added a rider that this would be operational not just against a nuclear attack on India, but "on Indian forces anywhere."

The words "massive retaliation" carry heavy freight in strategic literature, having been used momentarily by the Eisenhower administration and quickly modified.[18] Most strategic analysts question the credibility of this deterrent

threat, if only for the simple reason that any attacker likely to suffer massive retaliation may well be tempted to strike massively if any use of nuclear weapons were anticipated.

Other issues of credibility arise. Would India really destroy Lahore with nuclear detonations if a single army brigade that has entered Pakistani territory were to be struck by a single, low-yield nuclear weapon? A country that did not retaliate after the Mumbai terror attack in 2008 is unlikely to destroy a city of 6 million people. Moreover, a massive retaliatory strike could invite needless and massive destruction on India itself.[19] Manpreet Sethi has also wondered whether India, "with its culture of military restraint," would find it "prudent, and more importantly, morally acceptable" to inflict punitive damage on Pakistan.[20]

A related, mostly unspoken, issue here is the success, or lack thereof, of India's thermonuclear test in 1998. By definition and doctrine, massive retaliation concepts rely on large-yield, city-busting weapons. Question marks about India's thermonuclear capability carry over to the credibility of what has been a central Indian doctrinal thrust.[21]

Nonetheless, New Delhi's commitment to massive retaliation received confirmation of sorts in April 2013 by the chairman of the National Security Advisory Board, Shyam Saran. In response to the development and advertisement of short-range nuclear-capable delivery vehicles by Pakistan, Saran suggested in a well-publicized speech — which despite his disclaimer almost certainly had official sanction — that India would not be the first to use nuclear weapons, but that, regardless of the size of the attack, Indian retaliation "will be massive and designed to inflict unacceptable damage on the adversary." He added that "the label on a nuclear weapon used for attacking India, strategic or tactical, is irrelevant from the Indian perspective."[22]

## Dysfunctional Defense Management

The doctrinal incoherence that hobbles many of India's national security policies can be traced to significant structural shortcomings in its defense management. The problem of higher management of national security begins at the conceptual level. India has no overarching national security doctrine and, flowing from it, no national security strategy that has a formal and considered approval of the political authorities.[23]

After conducting its nuclear tests, India created the National Security Council system, but the inadequacy of follow-up reforms — most importantly, the ones that would integrate the three arms of the military with the civilian ministry

of defense — have prevented the emergence of a coherent national security doctrine and strategy that would bind the entire national structure. Indeed, the armed forces headquarters remain outside the apex of government decision-making structures.

What passes for a national doctrine and strategy are various declaratory statements and cabinet decisions that are usually limited in scope, as they are related to specific issues and crises. In addition, the defence minister gives operational directives to the three military service arms, but these are classified. One directive, which goes back to the mid-1980s, enjoins the army to be able to maintain a posture of "dissuasive deterrence" vis-à-vis Pakistan and one of "defensive deterrence" with regard to China.[24] Translated into operational terms, this directive requires Indian forces to be able to strike into Pakistani territory, whereas in the case of China the intention is to hold ground against a Chinese attack. More recent iterations of this operational directive have become more detailed, requiring the three services to prepare for a possible two-front war. It is not known whether particular directives with regard to Pakistan and China have changed — though the Indian buildup, including its new Mountain Strike Corps, suggests a shift with regard to China, perhaps a contemplation of the possibility of a military offensive into Chinese territory.[25]

In addition, there is no harmonization of the doctrines of the three military services. As Walter Ladwig has noted, Indian army doctrine has sought to leverage "advanced technology to fight short duration limited conflicts in a nuclear environment," while the Indian navy has laid out its blue water ambitions and the Indian air force has said that its air power doctrine will "focus on extending its strategic reach from the Persian Gulf to the Straits of Malacca."[26] In many ways, all of these objectives are aspirational, given that all three services are seriously behind in their modernization plans, and therefore lack, at present, the wherewithal to execute war plans on the basis of their doctrines.

The fact that that there is no integrated command of the armed forces, which leads each branch to define its own priorities and which can move them in separate directions in the planning of war and its conduct, further muddles the coherence of Indian nuclear doctrine. This was manifested most clearly in the Kargil War, when the army fought the war as Operation Vijay, the air force as Safed Sagar, and the navy as Operation Talwar.

A significant problem that arises here is the lack of political vetting for any of the service doctrines. The old Sundarji plan — using Soviet-supplied armor and infantry combat vehicles to conduct a massive strike to cut Pakistan in two

— triggered its own crisis when Operation Brasstacks, aimed at validating the idea, was undertaken in 1986-1987.[27] Another slow-mobilization odyssey came in the wake of the attack on Parliament House in December 2001 triggering the "Twin Peaks" crisis. This led Indian planners to pursue more agile plans, known variously as Cold Start or "proactive operations." However, a severe mismatch exists between these concepts and the dysfunctional behaviors noted above. Discussion of ways to mobilize more quickly may, in turn, have prompted the development of Pakistani short-range nuclear-capable systems that have undermined the deterrence stability between the two countries.

Even as the Indian armed forces were shaping up the Cold Start doctrine through a series of military exercises, government officials engaged in a comprehensive dialogue aimed at the normalization of relations between the two countries. These talks culminated in a cease-fire along the Line of Control (LoC) in Kashmir in November 2003, and agreement to pursue a comprehensive dialogue in January 2004. Bilateral dialogue amid confusion regarding nuclear doctrine will not produce clarity. At one level, the Indian system believes that nuclear weapons are purely a means of deterring nuclear use or threat of use against India. To state the obvious, they are not weapons of war in the conventional sense. India self-consciously separates its conventional and nuclear war plans, but the secrecy with which New Delhi handles its deterrent capacity is an important factor in promoting Pakistan's sense of insecurity. Little is known about the size of the Indian arsenal, its disposition, or the nature of its command and control systems. As Raja Menon has noted, "India's penchant for secrecy is ill-suited to conveying the stabilising threat of nuclear deterrence."[28]

There has been a perception that the Congress-led United Progressive Alliance (UPA), which formed the government from 2004 through May 2014, not only failed to effectively manage national security but also allowed the country's conventional war-fighting potential to degrade, doing little to undertake the reforms and restructuring needed to provide India with effective, battle-winning organizations. In light of these deficiencies, concerns have arisen that the nuclear component, too, must also be poorly managed, and in need of modernization, expansion, and doctrinal revision.[29] In some ways, Saran's 2013 speech was aimed at responding to these critics. He not only emphasized that under the government, "a sustained and systematic drive to operationalise various components of the nuclear deterrent" had taken place, but that India had a robust command and control system and operational nuclear doctrine in place.[30]

Reform and restructuring of the national security machinery in India have been stymied by poor political leadership and chronically one-sided civil-military relations in favor of the political leadership and civilian bureaucracy, resulting

in failures to properly modernize India's armed forces. An associated problem, insofar as public perceptions go, is the persistence of corruption in defense deals that serves to undermine confidence in the national security establishment. These issues have been highlighted by alarmist reports of Chinese transgressions across the Line of Actual Control (LoAC), and incidents of violence along the LoC with Pakistan that divides Kashmir.

The role of the Indian bureaucracy has undermined efforts to reform India's dysfunctional national security system. Principally, this has been manifested in its opposition to any effort to integrate the armed forces headquarters with the Ministry of Defence by utilizing a system of cross-staffing senior positions between uniformed and civilian personnel. It is also played out in its more covert opposition to the appointment of a Chief of Defence Staff who would be the principal military advisor to the government and would head the Strategic Forces Command. As Stephen Cohen and Sunil Dasgupta have noted, "The bureaucracy that functions as the secretariat for the political leaders comprises generalists with little practical knowledge of military matters, but this group lobbies powerfully to preserve its position against military encroachment."[31] Once again, it was left to Saran to insist that the military was indeed involved in the strategic decision-making process, though he obliquely admitted to a problem when he noted that "one could certainly encourage better civil-military relations and coordination."[32]

## A Long-Standing Civil-Military Divide

The civil administration and the intelligence community have deepened the civil-military divide. The first instance of poor civil-military relations in India came in eliminating the post of commander-in-chief and making all three military service chiefs equals in 1955. While this appeared to be a process of rationalization, it was clear that the effort was to whittle away at the perceived power of the armed forces. Underlying this decision may have been concerns over a military coup, as this was not uncommon in the developing world in the 1950s.

In several instances in the 1950s and 1960s, politicians disclosed their insecurities in relation to the armed forces. In one incident, rumors began when Gen. K. S. Thimayya retired as army chief in 1961. The train of events — which began with Thimayya's resignation in August 1959, its withdrawal under pressure from Prime Minister Nehru, and the appointment of Gen. P. N. Thapar as his successor — led to rumors of a coup, which even had a specific date, January 30, 1961. These events are detailed by S. S. Khera, who was India's defense secretary between 1963-67.

Khera noted that in January 1961, Nehru and Home Minister G. B. Pant had sought information on some military movements and then countermanded the orders authorizing them.[33] Apurba Kundu, who has also looked at these events, notes that "the stories [of the alleged coups] may be dismissed as unfounded."[34] Later, after the debacle of the border war with China, Nehru expressed his concerns about the military in a letter to philosopher Bertrand Russell.[35]

Another incident — which has not been cited by any writer, but was widely current within the Indian army at the time — occurred when the Intelligence Bureau reported to the authorities about the movement of military personnel in the wake of Nehru's death in May 1964. In fact, then Army Chief General J. N. Chaudhuri had ordered the movement because he thought the military would be needed to help handle the crowds that would gather during the funeral.

A half century after the contretemps of the Thimayya "coup," New Delhi was rocked by yet another newspaper story hinting at a coup attempt in January 2012. A report in the *Indian Express* claimed that unusual movements of the army had occurred on the night of January 16.[36] The alleged trigger here was the contested tenure of then Army Chief V. K. Singh, who filed a writ on that date in the Supreme Court challenging the refusal of the Ministry of Defence to accept his case that his date of birth had been wrongly recorded. The newspaper report said that the "central intelligence agencies" had detected "an unexpected (and non-notified) movement by a key military unit … in the direction of the capital." Subsequently, another similar movement was detected involving a parachute unit. An alarm was raised in New Delhi, and the defense minister ordered a halt to these movements and a return of the units to their original locations. Subsequently the Ministry of Defence's "considered view" was that the tempest in January was "a false alarm." The Ministry's official spokesman denied the report as being "baseless."[37]

Remarkably, these sensitivities continue in the highest levels of the Indian political system today. Many observers believe that the refusal of the political system to appoint a Chief of Defence Staff or similar figure stems from their worries over "the man on the horseback."[38]

## Reform Attempts

Following the Kargil mini-war in 1999, the Indian government set up a commission to assess perceived intelligence failures and military shortcomings. The Kargil Review Commission recommended a holistic look at the entire national security apparatus. In 2001, the government asked the home, external affairs, defence, and finance ministers to take up the issue. This Group of Ministers

(GOM) in turn set up specialist task forces, whose recommendations were approved by the Cabinet Committee on Security, which consisted of essentially the same set of ministers as well as the Prime Minister.

The GOM's 2001 report on reforming the national security system constituted the most extensive set of reform proposals in the country's history. The new procedures and structures created were aimed, among other things, to "anticipate current and emerging security threats," including nuclear and missile developments.[39] The GOM also attempted to deal with the issue of dysfunctional civil-military relations as well as the exclusion of the military from decision-making related to the country's security.

The GOM's most dramatic recommendation was the integration of the Service (i.e., armed forces) Headquarters into the Ministry of Defence (MOD). While the Headquarters has been renamed the Integrated Headquarters of the MOD, little else has changed. This is because no responsibility has been given to the armed forces chiefs in the MOD's allocation of business rules (AOBR), which gives the Department of Defence the responsibility for the "defence of India and every part thereof including preparation for defence and all such acts as may be conducive in times of war to its prosecution." The accompanying transaction of business rules (TOBR) makes it clear that the "secretary" of the MOD "shall be the administrative head thereof and shall be responsible for the proper transaction of business."[40]

While the allocation rules do mention the army, navy, and air force, the transaction rules have nothing to say about the responsibilities of the chiefs of the three services. When it comes to "the proper transaction of business" of the MOD, only the civilian defence secretary is deemed as the responsible authority.

Admiral Arun Prakash, who served as chairman of the Chiefs of Staff Committee (CoSC), has noted that India's nuclear weapons program was completely led by civilian scientists, to the exclusion of military personnel. Upon this are layered civil-military tensions arising from "India's unique policy of sequestering the military from national security decision-making."[41]

Despite recommendations of various committees and task forces, the MOD and the armed forces headquarters remain as separate entities. The armed forces are seldom involved in strategic planning, and while they may be consulted by the Cabinet Committee on Security — India's highest decision-making body — it may be only to respond to specific questions, rather than in an institutionalized fashion as with the CoSC.

In 2009, reviewing the government's response to its earlier reports examining the issue of integration of the armed forces headquarters with the MOD, the Standing Committee of the MOD noted that "the required level of interface between the Ministry of Defence and the Armed Forces is still missing." It also noted that the cross-staffing of civilians and uniformed personnel to the additional security level had yet to be implemented, deeming the placement of nonuniformed officers in the Integrated Defence Staff (IDS) to be insufficient:

> The Committee fails to understand how the cross-staffing pattern in the structure of HQ IDS can address to the recommendation of the Committee which relate to the appointment of Armed Forces personnel in the Ministry of Defence. While emphasizing the need for effective interface between the MoD and the different services, the Committee would like to reiterate their earlier recommendation and expect the Ministry to take action on the suggested lines.[42]

India's next security shock — the Mumbai attack of November 2008 — led to the establishment of another commission that would advance the recommendations of the GOM report. Subsequently in 2011, the Congress-led UPA government set up a commission headed by former Cabinet Secretary Naresh Chandra.

The Naresh Chandra Committee (NCC) specifically focused on the need to change the AOBR and TOBR, observing that the change of nomenclature of the Service Headquarters to "integrated HQ of MoD" resulted in "no substantial delegation of authority to the Services Chiefs." In the prevailing situation the minister continued to run the MOD and the civilian secretary remained responsible "for the proper transaction of business" of the ministry. The NCC called for suitable amendments to the AOBR and TOBR to reflect the responsibilities of the new permanent chairman CoSC (one of its principal recommendations) and the service chiefs, "insofar as their command functions, the defence of India and the conduct of war are concerned."[43]

The committee reiterated the recommendation of the Standing Committee of the MOD on cross-staffing, which would place military personnel in the chain of command of the defence secretary's office and civilian officers in the Integrated Headquarters, observing that the defence secretary "needs to have a good mix of uniformed personnel and civilians at all verticals. Preferably a special cadre of defense specialists should be introduced into the civil service to ensure knowledge buildup among the civilian staff."[44]

The reforms described above have still not been carried out, reportedly because of resistance from the MOD's civilian bureaucracy.[45] The failure to act on de-

fense reforms is one of the clearer manifestations of the poor state of civil-military relations that plague India's national security system, suggesting that the civilian elites have learned nothing from past crises.

## The Conventional-Nuclear Interface

The command and control of nuclear weapons and the interface between conventional and nuclear weapons are different in China, Pakistan, and India. In China, the 2nd Artillery Corps holds both conventional and nuclear-tipped missiles. In Pakistan, nuclear weapons are in the custody of the military. In India, nuclear warheads and delivery vehicles are reportedly kept de-mated in the control of the Defence Research and Development Organisation (DRDO) and the Department of Atomic Energy (DAE), while the Strategic Forces Command (SFC) handles the delivery system — in other words, civilian scientists are embedded into the command and control system.[46]

India has steadfastly refused to integrate its nuclear weapons into its conventional security strategy. This does not necessarily mean projecting nuclear weapons as a means of war-fighting, as in the case of Pakistan's advertisements of the possible use of detonations from short-range systems to counter an Indian conventional advance. Instead, there is a requirement for India's conventional war-fighting plans to be informed by the fact that India possesses nuclear weapons, and under certain circumstances these plans could trigger a response from similarly armed adversaries. Indian civilian decision-makers must very clearly understand the links between the plans of the conventional force commanders and the redlines of nuclear-armed adversaries. The best example of this is the initiation of Cold Start-like military operations and their implications for Pakistani redlines. Another aspect of this comes from the possibility that Indian air force (IAF) plans, such as precision conventional air strikes against Pakistani or Chinese storage facilities, could lead to a crossing of the nuclear threshold or an accidental nuclear event.

In the wake of the Mumbai attack in November 2008, various military responses were discussed. The IAF was prepared to strike specified targets in Pakistan using weapons such as the Israeli Popeye missile and the American Paveway laser-guided bombs. Indeed, the IAF commander who would have led the operation went on record saying that as many as 5,000 targets had been designated in the event of an all-out war.[47] Some of these targets could well have been nuclear or missile storage facilities. If the IAF strikes were effective, they could have prompted Pakistan to choose between using or losing these assets. The IAF,

like the other branches of the Indian armed forces, is firewalled from the SFC. While the SFC comprises elements of all three services, and their facilities are embedded in those of the armed forces, its command and control flows from the Nuclear Command Authority (NCA). The NCA consists of a Political Council (headed by the Prime Minister) and an Executive Council (chaired by the NSA), and thence to the SFC.

The conventional-nuclear interface also resides in BMD technologies being developed by the DRDO. As of now, there is no indication that this activity is anything but a technology demonstration project, but statements by advocates suggesting that the "missile shield" is ready for deployment have triggered alarm in Pakistan.[48] No doubt the BMD project has been an element, though not the only one, in the expansion of the Pakistani nuclear arsenal.

The two levels of dysfunction — one between the political leadership and the defense system, and the other within the defense setup between the civilian and uniformed personnel — constitute a serious risk for the country's security, especially in relation to nuclear weapons. While operational matters are strictly the domain of uniformed personnel, civilian defense leadership needs to have a far better appreciation of operational imperatives than it has today. In an ideal framework, the politician who must make decisions would have expert advice available from the military as well as from expert civilian officials. However, in the current situation the politician leaves all operational aspects to the military and receives little or no expert advice from the civilian bureaucrat. In this case, the response to a crisis could be an underreaction, as in the past, or could well be an overreaction in the future. Former Chairman CoSC and Navy Chief Arun Prakash has pointed out that "the reassurance that we derive from our large conventional forces and nuclear arsenal may be illusory," and that corrective steps will not be possible unless we recognize that "civil military dissonance constitutes a primary fault line."[49]

As Indian nuclear capabilities grow, other fault lines will appear. The political system shows little or no effort to vet military doctrines and align them to the country's higher strategic purposes. This leaves room for misunderstandings and misperceptions that can have negative consequences for crisis stability. Associated with this is the problem of the interface between conventional and nuclear weapons use. Notwithstanding India's belief that nuclear weapons are merely for retaliation and have nothing to do with Indian war planning, the reality is that other countries hold different views on their employment. Further, the use of conventional weapons can potentially degrade the capabilities of an adversary, compelling first use of nuclear weapons. India lacks the effective

military institution of a Chief of Defence Staff to help effectively control the escalation ladder or manage the conventional-nuclear interface. All this is layered upon the structural and operational weaknesses of the Indian nuclear arsenal arising from the civil-military dissonance.

## New Escalation Pathways to an Unstable Future

Terrorist strikes on India, with footprints leading to Pakistan, constitute the oldest and newest escalation pathway to an unstable future. The audacious Mumbai attack of November 2008 was a watershed of sorts, hardening Indian attitudes toward Pakistan.[50] In October 2013, a South Asian stability workshop organized by the US Naval Postgraduate School simulated the scenarios that could arise out of a major terrorist attack on Indian soil by suspected Pakistani terrorists. Participants found that in every scenario that was played out, "the Indian and Pakistani teams escalated to a full scale war."[51] By the end of the third move, the Pakistani side was "preparing to release warheads to its SFCs and readying its missile launchers." According to a report of the simulation, "the notion that a limited war can be fought and won in South Asia, and concluded on one's terms, is dubious and has dangerous implications."[52]

Another mass-casualty attack in India that can be traced back to Pakistan is more likely to force the government's hand, especially a government led by a self-professed nationalist party. So far, the Indian responses have been army-centric, moving up the escalation ladder from a possible commando raid on a camp in Pakistan, a cross-LoC operation, or a full-scale attack on Pakistan. India does have other options, however, which include strikes by aircraft or cruise missiles. New systems, such as BrahMos supersonic cruise missiles or the KH-59 series of guided aerial bombs, can deliver aerial strikes on targets in Pakistan from Indian territory or from the high seas. These have been gamed and are no longer in the realm of the theoretical. In 2002, India used its Mirage fighter jets and laser-designated bombs to attack a Pakistani squad attempting to capture an Indian observation post on the LoC. The location of the post was such that a ground assault was deemed too costly.[53]

The use of air power would be a new doctrinal innovation. India did not use air power in its 1962 war against China. In the 1965 India-Pakistan War, the Indian army famously went across the border toward Lahore without any air support or even informing the Indian air force. In 1999, the IAF refused to intervene against Pakistani intrusions in Kargil until it received cabinet approval.[54] If India were to conduct air strikes against Pakistani targets, retaliation from the

Pakistani side would be almost certain; anything less than a retaliatory response would be seen as a defeat for Pakistan. The two sides could well engage in tit-for-tat responses with inherent dangers of an escalatory spiral toward the use of nuclear weapons. However, the simulation exercise described above did note that if India limited its response to "one-off air strikes against terrorist targets" in "Azad" Kashmir, "the crisis may have remained limited."[55]

In its 2014 election manifesto, the BJP called for a "zero tolerance" line on terrorism. Indeed, as a prime ministerial candidate, Narendra Modi criticized the Congress party home minister for merely talking and not doing enough to bring Dawood Ibrahim, the gangster wanted in India for the Mumbai blasts of 1993 and other acts of terror, to justice.[56] An assessment of the situation in November 2014 timed to the anniversary of the Mumbai attack revealed that the danger of terrorist strikes has, in fact, increased in the recent period.[57]

The Modi government has since adopted a tough stance against Pakistan, and this has led to increased tension between the two countries, as well as a greater intensity of cross-LoC firing. This could presage a more aggressive stance against Pakistan, possibly through the medium of covert operations. Since 1991, India has followed a policy of engaging Pakistan, regardless of Islamabad's support for separatists and terrorists. As part of this it has avoided tit-for-tat operations, even though Pakistan alleges that India is supporting Baloch separatists and conducting various acts of terrorism on its soil.[58] Revisiting the option of responding in kind to Pakistan's use of subconventional warfare runs its own risks of escalation and instability.

## The China Factor

Concerns about the credibility of India's deterrent vis-à-vis China are particularly acute. Since 1998, when India cited China as a factor for conducting its nuclear tests, Beijing's comprehensive national power — relative not just to India but the world — has grown. India has a very real sense of worry created by the sharp and perceptible gap between India's and China's military capabilities. From the nuclear point of view, for many years the Sino-Indian situation was seen as stable because China maintained an NFU policy and a minimalist nuclear posture. But new developments are now in play. China's military has exhibited greater assertiveness in the South China Sea and the Indian border. The PLA has carried out important anti-satellite (ASAT) tests as well as tested a hypersonic vehicle that can effectively breach missile defenses.[59] In mid-2014, there were reports of Chinese deployments of the DF-41 intercontinental ballis-

tic missile and tests of the road-mobile DF 31B, as well as the possible development of multiple independently targetable re-entry vehicle (MIRV) capability in Chinese missiles.[60]

India is not standing still. Its arsenal is growing, and capabilities with longer reach, such as the Agni V missile and the Arihant nuclear-powered ballistic missile submarine, are coming on line. But the Chinese surge is much stronger, with the growth of new capabilities in a wide range of areas.[61] While the modernization of China's nuclear deterrent applies primarily to the United States, it has implications for India. As of now, both India and China formally adhere to NFU and possess, in their own terms, "minimum deterrents." If Beijing decides to modify or change its nuclear posture in response to perceived increases in US capabilities, this could have immediate repercussions for India.

## The Indian Paradox

India is more secure than it ever has been in its post-independence history, yet it suffers from a sharp sense of insecurity. India is, first and foremost, a state possessing nuclear weapons. It should be immune to nuclear threats by major powers. Slowly, but steadily, its nuclear capabilities and reach are growing. Its military modernization programs have been retarded by dysfunction and incompetence, but these constraints can be fixed. India has absorbed Pakistan's subconventional warfare; it has grown stronger while Pakistan is weaker than ever before, even though it, too, is a nuclear-armed state. In terms of conventional capabilities, particularly in the case of air and naval power, India is steadily pulling ahead of Pakistan.

Even with regard to China, India's border defenses are improving, whether in terms of manpower, equipment, or logistics. New all-weather roads will link up far-flung outposts. Beijing has reason to feel insecure in relation to its standing in Tibet and Xinjiang — China has not successfully assimilated the Tibetan people, and in Xinjiang, the Uighur population is restive. The emergence of a government friendly to India's interests in Bangladesh has been a huge benefit. In Nepal, New Delhi has successfully neutralized a Maoist insurgency through diplomacy and covert action. In Sri Lanka, the January 2015 elections resulted in a surprising defeat for Mahinda Rajapaksa, which will likely lead to India's regaining the leverage in Sri Lankan politics that it lost by adopting a hands-off attitude in the final battle between the Liberation Tigers of Tamil Eelam, or Tamil Tigers, and the Sri Lankan army.

India's internal security picture has also improved. It has neutralized the major Islamist terrorist group the Indian Mujahideen, through the arrest of key leaders in 2014. India has bought a cease-fire with most of the armed groups in the northeast, and has used its classical strategies of *saam* (suasion), *daam* (purchase), *dand* (punishment), and *bhed* (sow divisions) to neutralize many separatist insurgencies and movements. The Maoists remain a problem, but are confined to a forested and poor part of India, with little or no chance that a Maoist insurgency will spread to other parts of the country.

Despite the improvement in India's overall security situation, public opinion remains concerned about internal security and terrorism. One reason for this is the generalized anxieties arising out of urbanization and the breakdown of the old social order. Another is the magnifying role that the media plays in transforming small incidents and events into major crises. Among average Indians, Pakistan remains a major focus of concern, while China is less so. This is borne out by polls, as well as by government policy, which seeks engagement and competition with China despite the disputed border with Beijing and China's role in propping up Pakistan. Only in the past has New Delhi focused on enhancing India's conventional and nuclear capabilities vis-à-vis China. Despite the 1987 Sino-Indian crisis, border infrastructure in relation to China was neglected. Likewise, most military expenditure was directed toward contingencies involving Pakistan. During this period, New Delhi pursued a number of diplomatic moves toward Beijing, including the signing of the 2005 Agreement on Political Parameters and Agreed Guidelines of Settling the Border Dispute. Only after the setback in relations during 2008-2010 did India begin to focus on China, speeding up the construction of border infrastructure, shifting high-performance combat jets to bases adjacent to its border with China, and dusting off plans to create a new mountain strike corps.

Now, domestic national security debates focus on China as well as Pakistan. Nuclear dangers emerging from Pakistan's internal difficulties are seen to pose a more evident threat than China's strategic modernization programs. There has been scarcely any discussion of China's hypersonic missile vehicle, WU-14 or ASAT weapons tests, or the implications of China's nuclear-force modernization. By contrast, there is a veritable torrent of writings on the implications of Pakistan's tactical nuclear weapons. A Pew Attitudes poll released in early 2014 revealed that Indians are in a sour mood:

> Apart from economic, political and ethical challenges facing Indian society, the public is quite worried about homeland security. Nearly nine-in-ten (88%) say that terrorism is a *very* big problem. Roughly two-thirds

say the domestic-based Maoist Naxalite movement is a *very* serious threat to the country, and a similar proportion views Lashkar-e-Taiba, a Pakistani-based terrorist group, as a dangerous menace.[62]

Nearly half (47 percent) of the respondents felt that Pakistan was the biggest threat, with another 20 percent specifically noting Lashkar-e-Taiba and 19 percent saying Maoists. Just 6 percent named China.[63]

The national mood is affected by perceptions as well as ground realities. The true sources of Indian insecurity are probably domestic and societal, but they feed into the always noisy and even hysterical responses to externally driven situations, such as incursions across the contested border with China or incidents on the LoC. The social dynamics of India, especially its urbanization and under-policing, promote a personal sense of insecurity and desire for safety. At some point these jump the rails and influence perceptions of national security, with obvious implications for nuclear security. Underlying these dynamics are real dangers of terrorist strikes still hovering over India.

One source of insecurity and crisis instability is the role of the media. No sinister media barons in India are striving to start a war in the manner of William Randolph Hearst's media empire prior to the Spanish-American War. But there will be no shortage of Indian media outlets in a lucrative and competitive field calling for military action in the event of another terrorist strike against India. The Indian media displays little professional competence in such circumstances. Insufficient resources have been devoted to quality reporting and editing, especially on foreign issues. The number of media correspondents posted abroad can be counted literally on the fingers of one hand. The default mode of the Indian media is to wrap the flag around itself in the event of any external crisis. Television coverage frames issues in a binary "for or against" manner by focusing on studio discussions in the place of field reporting. Not surprisingly, when national security issues are discussed, they are framed in a manner that promotes nationalistic and even jingoist responses.

## Conclusion

This essay has analyzed dynamics driving the Indian domestic debate on national security, including the call to revise the nuclear doctrine, poor political leadership on national security, its effects on nuclear command and control, civil-military relations, and domestic perceptions of security. Some combination of these factors, along with triggering events, can produce change in Indian security policies during the uncertain period ahead. With the BJP winning the

2014 general elections and subsequently consolidating itself through a string of victories in important state assembly elections, there are no domestic political impediments to the party's adopting a more assertive stance on issues that it considers important.

The matters of poor political leadership of national security and its effects on command and control of the nuclear arsenal are, to an extent, subjective. Assessments are made through how national security institutions function under a particular government and how they survive the test of an actual crisis. As the first government since 1989 to have its own majority in the Lok Sabha, the Modi government is much stronger than its predecessor, or any government that has led India since the test of nuclear devices in 1998. Modi himself is viewed as a strong leader who runs a tight ship. The current Minister of Defence, Manohar Parrikar, is a successful former chief minister of Goa, who was formally trained as an engineer. The Modi government has not been tested by a crisis of the scale of the New Year hijacking of 1999, the Parliament attack of December 2001, or the Mumbai attack of November 2008.

There has been little or no change in civil-military relations because this would require structural change in the ways that the military relates to the Ministry of Defence (MoD) and to civilian decision-making. In addition, it requires longer-term measures to transform the MOD's civilian bureaucracy and provide it with the expertise needed to address India's security challenges in partnership with the uniformed military. The new government has signaled its desire for change, but specifics have not yet been spelled out. In any case, the task is enormous, and its effects would only be visible over a decade.

So far, there are no indications that the Modi government assigns a high priority to the need to revise India's nuclear doctrine. However, the Prime Minister's statement that India was not "currently" thinking of a review of the nuclear doctrine does not rule out the possibility of change based on developments with regard to Pakistan, doctrinal shifts toward China, or subjective pressures arising from the political dynamics of the country. Of course, this relates only to public enunciations of the doctrine. Other areas, such as increasing the number of nuclear weapons in the Indian arsenal to meet the requirements of a "minimum credible deterrent," are outside the public domain.

The future is, by definition, uncertain. Developments in Asia are in flux. Change, both benign and otherwise, is occurring at a rapid pace. The rise of China is upending traditional power equations. In South Asia, China has already altered the strategic balance by its nuclear and missile proliferation relationship with

Pakistan. The dynamism of the Chinese economy, and China's development and military assistance in countries like Bangladesh and Sri Lanka, have heightened China's influence, much to the discomfiture of India.

The development of Chinese roads and rail lines in Tibet has implications for India's defense of its disputed border with China. Other factors, too, could affect the equation. A sharp enhancement of China's capabilities compared to the United States would have a destabilizing effect on India's nuclear posture, which has so far rested in reasonable comfort with China's own limited nuclear capabilities and its NFU status.

Pakistan remains an area of concern. Despite Pakistan's internal decline, India worries about its capabilities and the intentions of its multiple actors, especially the most lethal terrorist group it has confronted, the Lashkar-e-Taiba — whose leader, Hafiz Saeed, lives openly in Pakistan and organizes huge political rallies. The planner of the 2008 Mumbai operation, Zaki-ur-Rehman Lakhvi, was released on bail by a Pakistani court in April 2015.[64] Indeed, for New Delhi, the present Pakistani operation in Waziristan brings little comfort if groups like Lashkar-e-Taiba operate freely.

Indian nuclear posture could change along with the political paradigm toward a more muscular nationalism espoused by the BJP. This could, ironically, be aided by a reform and restructuring of the national security machinery, and an improvement of the problematic civil-military relationship. On the other hand, the nuclear posture could be affected by unrelated issues arising from political instability, social and communal strife that accentuate a sense of insecurity, and external developments. India must expect an enhanced nuclear challenge from both its nuclear neighbors.

An uncertain future invites India to take some corrective measures — modifying its doctrine, boosting the quality of the political leadership of the national security system, addressing civil-military issues, and enhancing the capabilities of its conventional and nuclear forces.[65] In doing so, India could undertake realistic conversations with its principal adversaries, Pakistan and China, to lessen the threat of a nuclear holocaust. All this suggests that India's ambivalent approach to nuclear weapons, rooted in its advocacy of nuclear disarmament and its embrace of minimum deterrence and NFU, may be shifting. India could well be headed toward becoming another nuclear weapon state, not a special one.

## Endnotes

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22.  Shyam Saran, "Is India's Nuclear Doctrine Credible?," speech at the India Habitat Centre, New Delhi, April 24, 2013, http://krepon.armscontrolwonk.com/files/2013/05/Final-Is-Indias-Nuclear-Deterrent-Credible-rev1-2-1-3.pdf. Saran's speech provided certain additional information about India's nuclear posture, confirming the existence of an alternative Nuclear Command Authority and redundant command and control systems. He also revealed the existence of a Strategy Programme Staff and a Strategic Armament Safety Authority that assisted the Nuclear Command Authority in its tasks. Further he noted that access to armaments and delivery systems worked through a two-person rule.

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63.  Ibid. 6.

64.  Salman Masood and Declan Walsh, "Pakistani Militant Leader Tied to 2008 Mumbai Attacks Is Freed on Bail," *New York Times*, April 10, 2015.

65.  Rajaraman has suggested that the nuclear situation could become somewhat more stable were India to drop the formulation "Indian forces anywhere" from its massive retaliation pledge (Rajaraman, "Minimum Deterrence and Large Arsenal,"); Ali Ahmed has suggested the excision of the word "massive" from the doctrine and an assumption of a posture of flexible retaliation (Ahmed, *India's Doctrine Puzzle*, 205-6).

# AN EVOLVING INDIAN NUCLEAR DOCTRINE?

*Shashank Joshi*

Nuclear deterrence in South Asia is typically analyzed with reference to nuclear posture or force structure, as indicated by tangible capabilities such as warhead numbers, missile ranges, and delivery systems. Intangible factors can be just as important to a state's nuclear orientation. Nuclear doctrine refers to the way a state privately and publicly articulates its thinking about the threatened or actual use of nuclear weapons. There is an interactive relationship between posture and doctrine; changes in one will invariably influence the other. In recent years, Indian doctrine has appeared to change at a far slower pace than posture. However, two of India's doctrinal precepts — no first use (NFU) and massive retaliation — have become subject to greater contestation, with calls for their dilution or modification in a more assertive direction.

One significant example of ongoing trends is the manifesto commitment of the Bharatiya Janata Party (BJP), victorious in India's 2014 national elections, to "revise and update" India's nuclear doctrine "to make it relevant to challenges of current times."[1] Although Indian Prime Minister Narendra Modi swiftly and explicitly ruled out changes to India's NFU policy, the manifesto commitment did reflect a broader process whereby constituent parts of India's nuclear doctrine are increasingly scrutinized, debated, and criticized in Indian publications and institutions.

This debate is open-ended and riven with civil-military, inter-service, and inter-departmental rivalries.[2] It is not a rupture with the past, but rather the continuation of a process that has been ongoing since at least 1998. This debate provides clues about possible future changes and insights into how some Indian elites view nuclear challenges. To be sure, the most vocal participants are rarely the most influential. It is too early to conclude that NFU or massive retaliation will be diluted. If changes are forthcoming, they will be more likely with regard to massive retaliation than to a dilution of the NFU pledge.

## Doctrinal Debates

India subscribes to "credible minimum deterrence" (CMD), but definitions of what constitutes minimalism vary. For some, minimum deterrence rests on the view that achieving and maintaining deterrence is a relatively simple task, such

that "technical details don't matter very much at all."[3] In this view, minimum deterrence corresponds to a force posture of "small, highly survivable, and non-hair-trigger nuclear weapons arsenals."[4] In 2000, the former Indian civil servant and nuclear strategist P. R. Chari observed that "the concept of credible minimum deterrence has been imbued with almost mystical qualities in India."[5] With this mysticism comes ambiguity, opacity, and elasticity.

All three qualities were embodied in India's first draft nuclear doctrine, a semi-official document released shortly after the nuclear tests of 1998, partly in response to pressure from the United States.[6] Although it was later disowned, with India's foreign minister telling a US interlocutor that "it was just a set of recommendations" with "no imprimatur from the government," its ideas nevertheless formed the basis of later doctrinal statements.[7] The draft doctrine echoed some traditional Indian nuclear precepts, such as global nuclear disarmament, but revised and stretched others, such as an emphasis on the importance of usability and resolve in making minimum nuclear deterrence credible. In keeping with ambiguity and opacity, the draft eschewed what it called "details of policy and strategy" and said these would be "laid down separately." Most importantly, the draft acknowledged that CMD was "a dynamic concept related to the strategic environment, technological imperatives and the needs of national security."[8] Strobe Talbott, then US deputy secretary of state, noted that this was "the worst possible answer to the question of how India intended to define" CMD, and "if implemented, it could give India an arsenal not just equal to but bigger than either Britain's or France's."[9] That built-in elasticity was exploited in the next iteration of the nuclear doctrine, a terse official statement issued in 2003.[10]

Scott Sagan has argued that these revisions, when read alongside ministers' statements and broader Indian debates, amounted to "significant shifts" toward "more complex and flexible nuclear-use doctrines," including preemption and prevention, increasingly at odds with minimalism.[11] In contrast, Vipin Narang has argued that "the striking feature of India's nuclear posture has been the consistency with which it has adopted an assured retaliation orientation," which corresponds to important parts of minimalism, despite the tweaks.[12] These are not mutually exclusive assessments, but they reflect the interpretive challenge in grasping such a fluid, moveable target.

The purpose of this essay is not to trace the details of India's doctrinal development in the 15 years since its first public formulation, a task performed well elsewhere. Rather, it is to ask how the elasticity of CMD manifests itself today and affects the drivers of possible change. What are the specific arguments employed by proponents of change, and what are the counterarguments they

face? What are the most salient dimensions of change? Whereas most early assessments of India's nuclear trajectory focused on the prospect of arms racing and rapid growth in warhead numbers, this essay will focus on doctrine rather than capabilities.[13]

## Mapping Arguments

The following mapping of doctrinal arguments comes with a caveat: arguments are described here not necessarily because they are uniquely persuasive, influential, or likely to be decisive, but because their occurrence and intensity matters. The content of these arguments may come to acquire importance if the environment for doctrinal change becomes more permissive, as is explored later. In many cases, the identity of the advocates is also relevant: arguments advanced by senior political or military figures who have had extensive dealings with India's nuclear weapons program are of special significance. Though their arguments for doctrinal change may be flawed or fanciful — in some cases, they are clearly so — the fact that individuals of such institutional stature and experience would publicly make such critical arguments is noteworthy in itself.

Even where these arguments may presuppose politically or technologically unrealistic actions — such as India's acquiring the means of successful nuclear preemption, or political leaders authorizing such preemption — they can still affect the Indian debate by weakening the case for the status quo and creating space for change. For these reasons, it would be unwise to dismiss the relevance of these writers on the basis of the merits (or otherwise) of their arguments.

### No First Use

Two pillars of India's 2003 nuclear doctrine were NFU and massive retaliation (which had evolved from merely "punitive retaliation" in the 1999 draft), but both were shaky from the start. Nevertheless, despite the pressures described below, NFU is unlikely to change in the near term. In April 2014, outgoing Prime Minister Manmohan Singh, at a seminar convened by a government-funded think tank, the Institute of Defence Studies and Analyses (IDSA), proposed "the establishment of global no first use norm."[14] Less than a week later, the drafters of the manifesto of the then opposition BJP promised to "revise and update" Indian nuclear doctrine in light of "challenges of current times." Reportedly, they specifically sought to reconsider NFU because of the growing threat of Pakistan's nuclear-capable, short-range delivery vehicles, although they gave no explanation of how modifying NFU might mitigate the threat. But in response to press reports of this reasoning, then BJP candidate and now Prime Minister

Narendra Modi clarified in response that "No First Use was a great initiative of [former BJP Prime Minister] Atal Bihari Vajpayee — there is no compromise on that. We are very clear. [NFU] is a reflection of our cultural inheritance."[15] The political feasibility of the arguments outlined below must be considered in light of such outright and explicit opposition from the preceding and incumbent heads of government. This does not mean, however, that arguments against NFU can be ignored; rather, they might translate into pressure on other parts of Indian doctrine or on nuclear posture, whether in the life of the current government or a subsequent one.

NFU has been an important component of Indian nuclear thinking long before India's overt nuclearization, but has always been subject to various pressures.[16] This section first groups these pressures into four categories, then briefly summarizes past modifications in NFU, and finally summarizes more recent arguments in favor of further revision.

In the Indian debate, one can observe at least four rationales for modifying — usually diluting or weakening — NFU. The first rationale is mimicry: isomorphic pressures on India to conform to other nuclear-armed states' doctrines or to reject a "weaker" stance than other major powers, particularly the United States and China.[17] The second rationale is the desire to respond to nuclear advances by adversaries through an act of nuclear assertion, whether or not that act is in the same "currency" as the adversary's initial action or directly combats it. The third rationale is to deter non-nuclear aggression by adversaries, such as the use of chemical or biological weapons. The fourth rationale is to threaten or legitimate nuclear preemption, thereby introducing greater uncertainty into adversaries' calculations with the intention of more effectively deterring them.

These four rationales are neither mutually exclusive nor, usually, articulated explicitly. The first and third — mimicry, and deterrence of non-nuclear aggression — were operative in the immediate aftermath of the 1998 tests. That year, just months after the tests, the Indian Prime Minister stated to the Lok Sabha, India's lower house of Parliament, that "there remains no basis for [nuclear] use against countries which do not have nuclear weapons."[18]

That statement was then caveated almost immediately in the following year's draft doctrine, in which non-nuclear states "aligned with nuclear weapon powers" were exempted from coverage.[19] This undercut claims that the pledge was "unconditional."[20] In 2003, India further modified the pledge by arrogating to itself the right to use nuclear weapons in response to a "major attack" with

chemical or biological weapons (CBW), possibly mimicking the "calculated ambiguity" of US nuclear posture.[21]

Rajesh Rajagopalan, drawing on interviews with Indian policymakers, argues that these changes were designed not just to address the perceived risk of CBW use against Indian soil or Indian interests, but also to respond to domestic political pressure on the Indian government in the aftermath of the 2001-2002 India-Pakistan standoff, which itself followed a terrorist attack on the Indian Parliament building.[22] Domestic political pressure in the aftermath of this attack was coincident with pressure from within the national security elite for even more drastic change in NFU, reinforcing Rajagopalan's interpretation. Previously, in December 2002, India's National Security Advisory Board (NSAB) — the same para-governmental institution that had produced the 1998 draft nuclear doctrine — recommended to the Indian government that it abjure NFU entirely, on the basis that "all five nuclear weapon states […] reserve the right to launch nuclear weapons first. Then why should India not do so?"[23] Their particular argument was less about nuclear strategy and more about putting India on equal footing with permanent members of the UN Security Council — India's peers.

The NSAB's recommendation was not taken up. But echoes of its isomorphic logic — "if they do it, India should do it" — can be observed in more recent arguments. One example is furnished by a senior fellow from the Vivekananda International Foundation (a right-leaning Indian think tank whose director, Ajit Doval, was appointed National Security Advisor for the Modi government), who urged India to "review her own strategic nuclear doctrine [by] revising the no-first use pledge" as a direct response to China's own alleged dilution of NFU.[24]

This argument, whose premise continues to be repeated by a variety of Indian analysts, is based on a probable misreading of China's biannual white paper on defense — a misreading that was not confined to India.[25] The key point here is that India's own assessment of the value of NFU is shaped by perceptions, however skewed, of how other major powers view the NFU pledge.[26] Whether this is a visceral reaction to a sense of unequal status, or a reaction based on a technical deterrent calculus, is unclear. Nonetheless, the sensitivity of Indian doctrine to external stimuli should not surprise us: it is precisely what was signaled in the 1999 NSAB draft with its promised responsiveness to "the strategic environment."

What constitutes "the strategic environment" to which India's nuclear forces must be responsive? Nearly everything, it would seem. A wide range of nuclear advances by Indian adversaries — whether related to those adversaries' NFU policies or not — have been invoked as catalysts for Indian doctrinal change.

This phenomenon pertains to the second rationale explained above. To better illustrate this phenomenon, consider the remarks of Jaswant Singh in 2011. Singh, India's former external affairs, defence, and finance minister, and a crucial figure in the US-India arms control discussions that followed the 1998 tests, was addressing the lower house of India's Parliament on what he called "the most important question that concerns us all globally":

> I am of the view that the policy framework that the NDA [i.e., the BJP-led coalition government in which Singh served] 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 [states]," "credible deterrence with minimum force", etc. has long been overtaken by events. You cannot continue to sit in yesterday's policy. We need to re-address it. Therefore, I ask you to please hold broader consultations, with whosoever you want but do revise this policy.[27]

This reassessment and blunt recommendation is significant, coming as it does from a former senior minister who as foreign minister was the most prominent public champion of India's NFU commitment and who, in a September 1999 speech to the UN General Assembly, exhorted the established nuclear powers to pledge likewise.[28] Tellingly, Singh did not explain in his 2011 speech why, exactly, reserving the right to use nuclear weapons first would increase Indian security or address the problems he had earlier identified, such as a growing perceived disparity between Indian and Pakistani warhead numbers. He explicitly declined a request to elaborate on his logic.[29] This suggests (though we can hardly be certain) that Singh's interest in modifying NFU arose more from a generalized desire for nuclear assertiveness as a response to perceived adverse shifts in India's security and nuclear environment, rather than some specific deterrent benefits of potential first use.

As with the 2003 doctrinal revision, part of what drives these anti-NFU arguments is therefore likely symbolic and political as much as operational: an assertion of, say, greater Pakistani nuclear capabilities on one nuclear dimension, such as warhead numbers, is seen to require an assertive, serious, or purposeful Indian response, whether or not that fundamentally alters the deterrent relationship. There are, of course, a number of ways to demonstrate nuclear assertiveness, seriousness, or purposefulness *other* than by changes in doctrine, upon which Indian governments have hitherto relied, but many arguments for revising India's NFU pledge are rooted in perception — both of adverse nuclear trends and of the value of greater assertiveness.

Some opponents of NFU have gone further, and set out operational and strategic rationales for dropping NFU. For example, D. Suba Chandran, director of the Institute for Peace and Conflict Studies (IPCS), a prominent Indian think tank, advocated jettisoning NFU in a June 2010 essay, on the threefold basis that the pledge (1) prioritized survivability, and therefore necessitated a larger arsenal than was consistent with minimalism, and so increased the risk of arms-racing; (2) was disbelieved by Pakistan; and (3) being disbelieved, encouraged Pakistan to conduct subconventional and proxy warfare under India's nuclear threshold.[30]

The second of Chandran's arguments, that NFU pledges are noncredible, is a long-standing one, familiar to observers of the Cold War. As the late British civil servant and nuclear strategist Michael Quinlan argued, "The idea of NFU promises [rests] ultimately on sand, as an attempt to pre-empt and alter by peacetime declaration the harsh realities of what would be immensely stressful and demanding situations, with huge interests at stake."[31]

P.R. Chari drew on this logic in admitting, a year after the draft nuclear doctrine was released, that NFU

> is unlikely to impress Pakistan, is basically redundant vis-à-vis China, and is irrelevant against India's non-nuclear neighbors … it is possible to conclude that mention of [NFU] in the nuclear doctrine only makes a political statement; it will not be taken seriously by anyone abroad or in India.[32]

Indeed, retired Pakistani officials Agha Shahi, Zulfiqar Ali Khan, and Abdul Sattar have labeled India's NFU "a cost-free exercise in sanctimonious propaganda."[33] Chandran and other Indian skeptics therefore argue that NFU contributes little to mutual restraint and diminishes Pakistani assessments of Indian resolve.

A different conclusion might, however, be reached. In response to those who share Chari's view that Pakistan disbelieves NFU, it might be argued that India's declaratory commitment yields diplomatic benefits without sacrificing deterrent effect.[34] Why change NFU if doing so, as many Indian writers have argued, brings diplomatic opprobrium and changes nothing in the eyes of the state being deterred?[35] Others argue that some in Pakistan *do* have confidence in India's NFU pledge, and therefore conduct their planning free from the threat of preemption (for more on this, see below) and free from the prospect that non-nuclear provocations might be met with nuclear responses. Chari has argued in this vein: "This policy articulation frees Pakistan of the uncertainty and angst that India might contemplate the preemptive use of nuclear weapons to

deal with terrorist attacks or limited conventional strikes by Pakistan," and "the adoption of a deliberately vague policy in regard to nuclear retaliation by India, instead of the certitude of a no-first-use declaration, might have better served India's overall strategic ends."[36]

These arguments represent serious challenges to CMD as well as NFU. At the heart of minimum deterrence is the idea that, as Jeffrey Lewis puts it, "an enemy who can be deterred, will be deterred by the prospect of a counterattack, even if it consists of only a few nuclear weapons."[37] Under such a definition, India should, in theory, have little reason to be concerned by Pakistani first use since Indian analysts surely believe that India would retain retaliatory capabilities under Lewis' criterion even after absorbing preemptive strikes. Yet few Indian analysts express such confidence.[38]

One of the most interesting and instructive recent statements of an anti-NFU position was a 2012 publication by the IPCS of "an alternative blueprint" of India's nuclear doctrine. The proposed doctrine emerged from a task force of experts from across India's governmental and nongovernmental strategic community, chaired by P.R. Chari.[39] The most important part of the alternative blueprint was clause 4.3, which read: "in adherence to a policy of no first use, India will not initiate a nuclear strike."[40] The use of the term "strike" was unhelpfully ambiguous, because the term has a specific meaning in orthodox deterrence theory, usually referring to a subset of nuclear first use, viz., preemptive counterforce.[41] It is unlikely that the IPCS' proposed doctrine (or, for that matter, India's 2003 clarification of doctrine, which also used the term) intended to make this distinction, e.g., ruling out a preemptive first strike but not first use. More importantly, an annex to the blueprint issues a peculiar clarification of the terminology, in which

> 'initiation' covers the process leading up to the actual use of a nuclear weapon by an adversary. This would include mating component systems and deploying warheads with the intent of using them if required. This [definition] will enable the Prime Minister to gain the flexibility to decide upon an appropriate response. This formulation also avoids the constraints placed on the NFU policy in regard to using the nuclear deterrent against WMDs adopted in the 2003 CCS [Cabinet Committee on Security] decision [i.e., the 2003 statement of doctrine].[42]

This is a tenuous, confusing, but nonetheless far-reaching reinterpretation of nuclear initiation — to the point of absurdity. It suggests that if, in a crisis, Pakistan were to be perceived as mating warheads to missiles, or even co-locating previously dispersed nuclear pits and warheads, in order to increase readiness and

therefore survivability, this might reasonably be interpreted, by India, as Pakistan having formally "initiated" a nuclear strike. This, in turn, would permit India to launch nuclear weapons first while claiming that it had adhered to NFU.

It is difficult to see the purpose behind this particular interpretation of NFU other than permitting — and therefore, importantly, threatening — preemptive (rather than retaliatory) nuclear strikes. There appear to be three distinct rationales at work here: first, to deter Pakistani limited nuclear use; second, to limit damage to India resulting from any nuclear strike; and third, to avoid Indian vulnerability to a first strike that would put at risk India's second-strike capability. The political and military feasibility of doctrines associated with these rationales is questionable, as explored later.

The first rationale is to deter what would presumably be Pakistani limited nuclear use against India.[43] Take, for example, one of the lowest rungs of the escalation ladder, which might be the singular use of a short-range missile fitted with a low-yield warhead against Indian military formations on Pakistani soil. If New Delhi were to seek to deter very limited nuclear use by Pakistan by moving away from its NFU pledge through limited preemption, then Pakistani authorities might feel compelled to escalate from the outset and use nuclear weapons on a larger scale — one that is not subject to Indian preemption.[44] However, since such larger-scale Pakistani first use would be a starker transgression of the nuclear taboo and an obviously more escalatory act, the threat of Indian massive retaliation might become more credible once more — and thus defeat the original purpose of Pakistani limited first use. In this reading, the threat of preemption serves much the same purpose as ballistic missile defense: to undercut the workability of limited nuclear use, in turn forcing Pakistani escalation, restoring Indian proportionality and therefore credibility, and, ultimately, deterring Pakistani authorities from escalating in the first place.

Satish Chandra, former secretary to the National Security Council Secretariat and deputy national security advisor, has noted that opposition to the NFU pledge was mooted within the NSAB over a decade ago, but that "what is new about the increased opposition to the NFU posture is that it arises in part from increasing evidence of Pakistan's proclivity to use tactical nuclear weapons against us."[45] Although Chandra does not himself favor modifying NFU, his comments demonstrate that traction for revision is growing.

The second rationale on behalf of revising India's NFU pledge concerns New Delhi's desire to limit the aggregate damage in the expectation of prompt escalation or a full strategic exchange by degrading Pakistan's nuclear arsenal earlier

on. This rationale was explored and dismissed by Ashley Tellis in 2001 on the basis of conversations with K. Subrahmanyam.[46] Pakistan's growing arsenal and heightened ability to inflict destruction on Indian cities might renew interest amongst anti-NFU advocates. This rationale does not figure prominently in recent Indian writings,[47] and for good reason: the growth of Pakistan's arsenal would make it even harder to achieve damage limitation through preemption, and any attempt to prepare to do so could be counterproductive, fueling even more growth in Pakistan's arsenal. It should also be noted that the targeting requirements for preemptive use are considerably greater than those for "proportional" use. The second rationale for revisiting India's NFU pledge therefore places, in all probability, unrealistic demands on Indian nuclear posture.[48]

The third rationale emerges from Indian concerns over the strategic nuclear balance with China — and perhaps, to a lesser extent, with Pakistan — and resultant uncertainty over India's ability to absorb a first strike. This is closely associated with twin perceptions of growing Chinese capabilities vis-à-vis India and mistrust in China's NFU pledge.[49] Manoj Joshi, a defense journalist and former NSAB member, notes that "some Indians" are worried that NFU "can leave them vulnerable to a surprise first strike," and raises the prospect of future conventional technology that might increase India's nuclear vulnerability in this regard.[50] Brig. (ret.) Arun Sahgal, a former army officer with experience in nuclear policy, argues that the "Chinese penchant against surprise might push them to launch a first strike."[51] These concerns are amplified by China's refusal to "acknowledge" India's nuclear capabilities and explicitly accept a construct of mutual strategic vulnerability[52] — echoing the US debate over whether to "accept" mutual vulnerability with China.[53]

Bringing together the second and third rationales is no less a figure than Lt. Gen. (ret.) B. S. Nagal, commander of India's Strategic Forces Command (SFC) between 2008 and 2011, and head of the nuclear-focused Strategic Programme Staff under the National Security Advisor (NSA) thereafter. In a June 2014 article in India's *Force* magazine, Nagal notes that the "NFU policy cannot conduct a first strike on the adversary's counterforce targets, thus allowing the adversary full capability to attrite own capability." He argues in favor of replacing NFU with a policy of "ambiguity" that "does not allow destruction of the nation and strategic forces at the outset; hence the arsenal is intact for use. It provides a better range of options to launch decapitating and/or disarming strikes to deal with the adversary leadership/ arsenal."[54] In a more abstruse essay for the same journal, in October 2014, Nagal argues that India's doctrine already permits "flexibility and rationality" as well as "elements of ambiguity"; he makes no

mention of more radical options, like decapitation.[55] One might speculate that Nagal felt it prudent — or was told — to temper his views between the summer and fall. However, another former SFC commander, Vice Admiral (ret.) Vijay Shankar, has also argued that Indian forces require "select conventional hardware that tracks and targets [adversary] nuclear forces" to "provide the pre-emptive teeth to a deterrent relationship that leans so heavily on NFU."[56] His precise meaning is unclear: it may indicate a preference for preemptive strikes using conventional weapons, or the acquisition and use of intelligence, surveillance, and reconnaissance (ISR) to render nuclear preemption feasible. In either case, it indicates concern over India's second-strike capability.

These are striking words, all the more so coming from individuals who have served at the apex of India's nuclear weapons program. Nagal and Shankar's arguments do not mean that the balance of elite opinion is shifting against NFU; indeed, the public nature of their comments might well indicate that they were unable to make headway while in office. Notwithstanding the infeasibility of their proposals — India lacks the means to disarm or decapitate, as explored in the subsequent section on massive retaliation — their critiques matter, as they reflect genuine concerns that India's NFU pledge diminishes deterrent threats, and an inclination toward Bruno Tertrais' observation that "the first-use option induces a fundamental uncertainty in the adversary's mind."[57]

## NFU, Assured Retaliation, and Preemption

Pledges of NFU are associated with a corresponding posture, one "relying on a small but secure and survivable nuclear force arrayed for an assured retaliatory strike against their primary opponents' strategic and/or soft counterforce targets."[58] The operative word is "retaliatory." As Rajesh Rajagopalan explains, "leaders appear content to wait until an attack has already landed on Indian soil before considering retaliation. In other words, there are no declaratory or operational indicators to suggest that India might adopt either a launch-on-warning (LOW) or a launch-under-attack (LUA) posture for its nuclear force."[59] India does not presently possess the real-time monitoring capabilities that would provide it with warning of an adversary's launch preparation. The United States was only able to implement such a posture in the 1960s and 70s after deploying early warning satellites; India presently has no plans to acquire equivalent technology, and purchasing it from foreign suppliers would be extremely difficult.[60] India would also face institutional barriers to more complex first use doctrines, because they would require that more powers be vested in the military. Although India's military has enjoyed considerable operational

independence since the 1962 war with China, nuclear use would be viewed as a political and not an operational issue.[61] Civilian leaders would wish to maintain strong positive control over nuclear forces and deliberations over their use. This would clash with the timelines demanded by preemption.

Consequently, the threat of preemption is not credible at present, and will remain so for some time to come. Future improvements in India's ISR and precision-strike technologies, often for conventional war-fighting purposes but with inevitable ramifications for potential nuclear targeting, might make it slightly less so.[62] Effective ISR would underpin all limited nuclear options (LNO), including counterforce strikes, whether at the forward edge of the battlefield or eventually in deeper-lying areas.[63] Even when space-based capabilities are eventually in place, the proximity of India and Pakistan and the correspondingly short missile flight times mean that India may still lack the forewarning required for preemption. Furthermore, different types of preemption have different technological requirements: decapitating an adversary by targeting command and control is easier than targeting the entirety of their nuclear weapons and delivery vehicles. Targeting command and control can still be extremely difficult against an adversary such as Pakistan, which takes such matters seriously.[64]

One further point is worth elaborating: preemption can be pursued through conventional as well as nuclear means. If by the former, India could pursue preemptive capabilities without changing nuclear doctrine — although this would be subject to the same ISR demands as nuclear preemption. Some senior Indian army officers speak in private of the preemptive promise of thermobaric (fuel-air) weaponry in combination with more accurate delivery systems and target acquisition platforms.[65] These excursions also presume extraordinary conventional capabilities and unrealistic foreknowledge of the disposition of Pakistan's nuclear capabilities to have any prospect of success. As one study of purported US interest in preemptive strikes against China concluded, "conventional strikes by advanced precision-guided prompt global strike weapons that are developed or proposed to be developed have little chance of eliminating theater nuclear forces of a medium-sized nuclear adversary."[66] If this is true for the United States, it is far truer still for India. In any case, as James Acton has noted, "there is very little evidence that the US government is considering CPGS [conventional prompt global strike] for strikes against Russia or Chinese nuclear forces."[67]

Smaller-scale preemption, such as that directed against forward-deployed delivery vehicles for short-range nuclear-capable systems, might be seen as more feasible. As Narang has observed, "India's conventional operators con-

sider any fixed nuclear target or any mobile missile launcher, in the field or on a base, as legitimate targets which they could strike without prior political clearance," and in many cases they "may not be able to, or may not care to, determine whether the systems they are targeting are nuclear or conventional.[68] As Christopher Clary writes, "repeatedly in Track 1.5 and Track 2 forums, retired Indian military personnel attest that missile launchers in the battlefield would and should be targeted in the context of a full-scale conflict because such launchers could be performing a conventional mission."[69] An interest in tracking and targeting missile launchers under wartime conditions would reinforce those who favor limited preemptive use of conventional capabilities against nuclear-capable systems.

### Massive Retaliation

A second pillar of Indian doctrine — massive retaliation — has also been subject to criticism. It is ironic that the stronger party in a potential conflict on the subcontinent (India, in relation to Pakistan) should find itself debating the value of flexible nuclear-use doctrines or massive retaliation, when such pressures normally fall on the weaker conventional party.

India's 1999 draft doctrine promised only "punitive" retaliation, mentioned thrice in the document, a pliable term consistent with both limited and extensive nuclear use. Four years later, a publicly released summary of India's nuclear doctrine stated, "Nuclear retaliation to a first strike will be massive and designed to inflict unacceptable damage."[70] It is unclear what the reasoning was behind this change. The 1999 draft was never an official document, and different personnel were involved in the drafting of each doctrine. If careful thought was given to the choice of the word "massive" — perhaps emulating Cold War terminology — and if the corresponding reasoning is elaborated in the still-classified full text of the doctrine and associated documents, then this word choice may be enduring. If, on the other hand, this choice of wording was less purposeful, and if perceived drawbacks were not fully considered, then future doctrinal reviews might lead to revision.

Qualification of the formulation of massive retaliation has been registered. G. Balachandran and Kapil Patil argue that massive retaliation is promised only in response to a "first strike," and that this term ought to be interpreted in the orthodox sense, of a disarming counterforce strike, explained earlier in this chapter.[71] This is an unusual reading of the 2003 statement of doctrine, and so is not considered further here. More trenchant Indian concerns over the credibility of a massive retaliation doctrine relate to proportionality and credibility. These cri-

tiques are long-standing, but have sharpened in recent years because of Pakistan's reported cultivation of short-range nuclear-capable systems.[72] A "massive" Indian nuclear response to limited battlefield use by Pakistan — as promised by India's 2003 clarification of nuclear doctrine — would be neither a proportional nor credible response to a much smaller attack that had avoided Indian population centers. In nuclear strategy, focal points matter.[73] As Nagal argues in his aforementioned *Force* essay, "response to a few or one tactical nuclear weapon … should not be disproportionate which could result in an all-out nuclear war."[74] The alternative nuclear blueprint promoted by the IPCS likewise notes that:

> Ethically, the punishing of a whole population for the decisions of its leadership is unsustainable. Moreover, executing massive retaliation would expose India to risking international isolation. There is also the operational consideration, that territories captured or in dispute will be destroyed and rendered uninhabitable for a long time. The suggested alternate wording provides flexibility, while a doctrine based on reflex massive response curtails India's options.[75]

The collective effort by the IPCS recommends dropping the words "punitive" and "massive" altogether, stating simply that "protecting the Indian state, from the use or threat of use of nuclear weapons by any state or entity, is the raison d'être of India's nuclear deterrent," although an appendix reaffirms the drafters' intention to echo the wording in the 1999 draft.[76]

India's strategic dilemma, as Gaurav Kampani has written, is to prepare for limited war while "massive retaliation proposes a war with unlimited means for unlimited ends."[77] In limited war, the logic of punishment must be subordinate to the logic of war termination.[78] Kampani cites senior Indian military leaders as favoring "highly calibrated Indian counter-response to terminate war at the lowest possible level of nuclear exchange."[79] Others, like former Ambassador Jayant Prasad, strongly object to the feasibility of fine-tuned escalation control.[80]

Indian policymakers have publicly emphasized that they would not be self-deterred from adhering to the letter of their nuclear doctrine, even if Pakistan's initial nuclear use were minimal and on Pakistani soil. In an important speech in New Delhi in April 2013, former Foreign Secretary Shyam Saran, presumably speaking with some degree of official sanction, defended India's nuclear doctrine and posture from a variety of criticisms:

> [If India] is attacked with such weapons, it would engage in nuclear retaliation which will be massive and designed to inflict unacceptable damage on the adversary. As I have pointed out earlier, the label on a

> nuclear weapon used for attacking India, strategic or tactical, is irrelevant from the Indian perspective. A limited nuclear war is a contradiction in terms. Any nuclear exchange, once initiated, would swiftly and inexorably escalate to the strategic level. Pakistan would be prudent not to assume otherwise as it sometimes appears to do, most recently by developing and perhaps deploying theatre nuclear weapons.[81]

Elsewhere, Saran has insisted that "escalation to a strategic nuclear exchange is virtually inevitable."[82] But Saran's protestations are not taken entirely seriously even within the various branches of India's nuclear establishment. As Rear Admiral Raja Menon, former chairman of the task force on Net Assessment and Simulation for India's National Security Council, wrote in *The Hindu* in January 2014, "the ideational systems that will ensure the 'massive' retaliation promised in [India's] doctrine are being increasingly questioned by scholars and analysts worldwide." He added that "Pakistani observers cannot help but be swayed and dangerously influenced by such literature, thereby inducing them to think the unthinkable."[83] Menon later argued that India should replace "massive" with "punitive," with the aim of signaling India's "readiness to fight an escalatory nuclear war."[84]

Detailed discussions of LNOs preceded India's nuclear tests in 1998. General K. Sundarji, for example, advocated proportionate responses to lower-level Pakistani nuclear strikes in an essay published in 1996.[85] Tellis also anticipated much of this debate over a decade ago, noting that "it is reasonable to expect that India's nuclear doctrine will eventually incorporate … the capacity for more flexible responses."[86] But the issue of Pakistani use of nuclear weapons on short-range systems in the course of a limited war has reanimated this issue.[87] In an overview of Indian nuclear forces published in 2012, Verghese Koithara, a retired senior naval officer, in his excellent overview of India's nuclear forces, questioned whether public and private doctrines were in alignment:

> Whether top-level Indian thinking corresponds to the public position of massive retaliation to any kind of nuclear use is not known. Probably it does not, because it is unlikely that India, even with external assistance, will be able to take out totally Pakistan's residual [i.e., surviving] capability which at that time will have assumed its most survivable posture. Whatever weight India might choose for its first retaliatory strike it should think carefully what that strike must seek to achieve. Revenge seeking and venting rage can have no place in this decision matrix. The primary objective at that point should be to stop nuclear strikes immediately.[88]

Bharat Karnad, a proponent of a much more ambitious nuclear posture than Koithara, argues likewise:

> However loudly the doctrine of massive retaliation is proclaimed, it is possible that when faced with going maximal in response to, say, Pakistan's nuclear tactical bombing of an Indian tank squadron inside its territory where the loss of life is perceived to be small, the Indian Prime Minister will, to start with, only approve a tit-for-tat strike on Pakistani forces.[89]

A targeting strategy of assured retaliation has simple advantages: the scale, sequence, form, and timing of any nuclear retaliation is discretionary. Nuclear use could be geared toward a high degree of positive control over survivable nuclear forces rather than toward readiness to execute large, complex targeting plans. Massive retaliation, lying at the extremity of assured retaliation, is somewhat more complicated, because it requires forces ready to deliver a greater degree of destruction with much higher aggregate yield. This is primarily an issue of hardware — warheads, delivery systems, and penetrativity. LNOs, on the other hand, are more complicated. As Koithara argues,

> India's employment policy can be simpler than that of many [Nuclear Weapon States], but it cannot be as simple as some commentators imagine it can be. A single, all out retaliatory strike posture will not be credible…India's [command and control] system must, there-fore, be capable of multiple, time-spaced strikes, and should also be able to maintain its effectiveness after absorbing enemy strikes…Accuracy of delivery is important to ensure that the maximum possible destruction is achieved on a targeted city. This will require not only that the aim point or aim points within a city are carefully chosen, but also that bombs and warheads are delivered close to the aim points. If more than one weapon is to be delivered on one city, then aim points should be spaced optimally in relation to the target perimeter, population distribution and topography.[90]

Koithara is referring to high-yield weapons and countervalue targeting. Lower-yield weapons and counterforce targeting, whether by LNOs or massive retaliation, pose more exacting requirements. Some of these targets might be hardened (e.g., military sites), some might be moving across diverse terrain (e.g., Pakistani armored units), and some co-located with Indian military units actively engaged in combat.[91] Acquiring real-time and continuous battle damage assessment and command and control for LNOs or massive retaliation would be a significant challenge.[92]

The exceptional difficulties associated with flexible nuclear use are rarely recognized in Indian discourse. The most recent historical scholarship on the development of US nuclear doctrine during the Cold War suggests that, despite ostensibly shifting to "flexible response" in the 1960s, the Pentagon remained wedded to "preprogrammed attack packages" through most of the decade. Francis Gavin explains that "graduated" and "controlled" nuclear responses were problematic throughout the Kennedy and Johnson presidencies.[93] In the Nixon administration, the Pentagon acknowledged that the United States had the "number and types of weapons" but not the "planning and command and control capability" to respond with anything other than a "large, preplanned assault," and that it would take until 1975-1976 before such LNOs would become feasible.[94] These constraints were not confined — although they were particularly applicable — to tactical nuclear weapons. The Pentagon never was able to figure out how to integrate nuclear weapons into ground campaigns.[95] The employment of longer-range nuclear weapon delivery vehicles in what Tellis calls "operationally creative ways" could pose similar dilemmas.[96]

If the Pentagon found it difficult to plan for credible and granular LNOs for two decades after it first deployed nuclear weapons, it is exceedingly unlikely that New Delhi, which institutionalized its command and control arrangements only in 2003 and which possesses limited ISR capabilities, will have progressed very far in this regard.[97] Among the challenges that would face India's leadership if they were to embrace LNOs would be maintaining exceptionally strong positive control and dealing with greater calls for military involvement in the formulation of nuclear policies.[98] Even modest steps toward LNOs would challenge Indian decision-makers to rethink their fundamental view of nuclear weapons as political rather than military instruments.

## Conclusion

This essay has described and analyzed a series of arguments for revising Indian doctrine regarding NFU and massive retaliation. These arguments rest on generalized anxiety regarding the credibility of India's deterrence, stemming from Pakistan's growing nuclear capabilities; the slow, incremental nature of Indian modernization programs; China's advancing nuclear and conventional capabilities; and an uncertain regional security environment elsewhere along India's periphery. The opacity surrounding India's nuclear affairs exacerbates nuclear anxieties. Notwithstanding these anxieties, New Delhi is unlikely to modify India's NFU pledge in the near term. Three consecutive prime ministers have reaffirmed this pledge, and the incumbent has ruled out its elimination.

Those who advocate diluting or eliminating India's NFU pledge have a variety of reasons for doing so. Arguments in favor of threatened first use are also diverse, ranging from decapitation to limited or extensive counterforce strikes. Arguments favoring threatened first use rely on highly unrealistic improvements in India's capabilities, particularly in ISR, command and control, and civil-military relations. Some of the underlying concerns driving anti-NFU sentiment, such as the perceived vulnerability of India's nuclear arsenal, are being addressed through other means, including improved survivability provided by mobile missiles and by improvements in command and control. These modernization programs reinforce deterrence and carry no negative ramifications, as would further modifications or withdrawal of India's NFU pledge.

India's historically cautious, incremental, and political vision of nuclear weapons remains a powerful constraint on doctrinal change.[99] Indian civilian, political, and bureaucratic elites are likely to resist changes to doctrine that render nuclear weapons more usable, particularly if such changes undermine or seriously complicate traditional civilian and political authority over the use of nuclear weapons. Changes in doctrine will require corresponding changes in political understandings of what the bomb is about, and this could take years, if not decades, to come about.

India is therefore unlikely to reword its NFU pledge in the near term. Even most proponents of diluting this pledge concede the importance of maintaining formal adherence for cosmetic reasons, and there is dissension among critics on the reasons for modification. In the medium term, India will continue to rely on assured retaliation to deter nuclear attack, and on conventional capabilities to deter lesser threats. In the longer term, the NFU pledge could be revisited if this posture fails to deter, if China were to publicly disavow NFU, or if Indian decision-makers were to have serious doubts about the survivability of their deterrent.[100]

An Indian rejection of NFU makes little operational or strategic sense, but a dilution of this pledge could still occur. Indeed, many of the anti-NFU arguments do not rest on operational or strategic rationales, but on more generalized concerns over signals conveyed by the NFU pledge. Moreover, unrealistic arguments over elaborate preemption targeting plans could still have empirical force, especially when conveyed by analysts of repute. A dilution of the NFU pledge in favor of ambiguity, as Nagal and others advocate, might be seen to deliver political and symbolic gains without committing India to a more aggressive stance in the event that the Indian government feels compelled to adopt a more assertive posture in the future. New Delhi also retains the option of allowing NFU, or

perceptions thereof, to be weakened by default, through continued growth in capabilities that would facilitate various types of first use. Given these pathways to ambiguity and the diplomatic costs of further modifications to the NFU pledge, it is likely that other forms of nuclear assertiveness would be preferred.

Massive retaliation is a more realistic candidate for modification than NFU. First, the core argument against it — the disproportionality, and therefore non-credibility, of a massive response to an adversary's limited nuclear use — is more coherent and persuasive, particularly in the context of growing Pakistani reliance on short-range nuclear-capable systems. Second, massive retaliation is widely disbelieved, even among Indian elites. Third, India has experience with an alternative formulation — "punitive" rather than "massive" retaliation — that would subsume a wider range of options. Fourth, such a shift would be seen as less of an aggressive move, internationally, than a dilution in NFU. Fifth, political leaders are likely to be more amenable to policies that give them a wider range of options in extremis.

While India's strategic community is far from unified with regard to doctrinal issues, the realization appears to be growing that deterring Pakistani and Chinese capabilities requires more than minimalism and less than a maximalist commitment to massive retaliation. Sooner or later, revising or amending the massive retaliation pledge in favor of greater ambiguity and therefore flexibility — perhaps even a reversion to pre-2003 language — appears likely.

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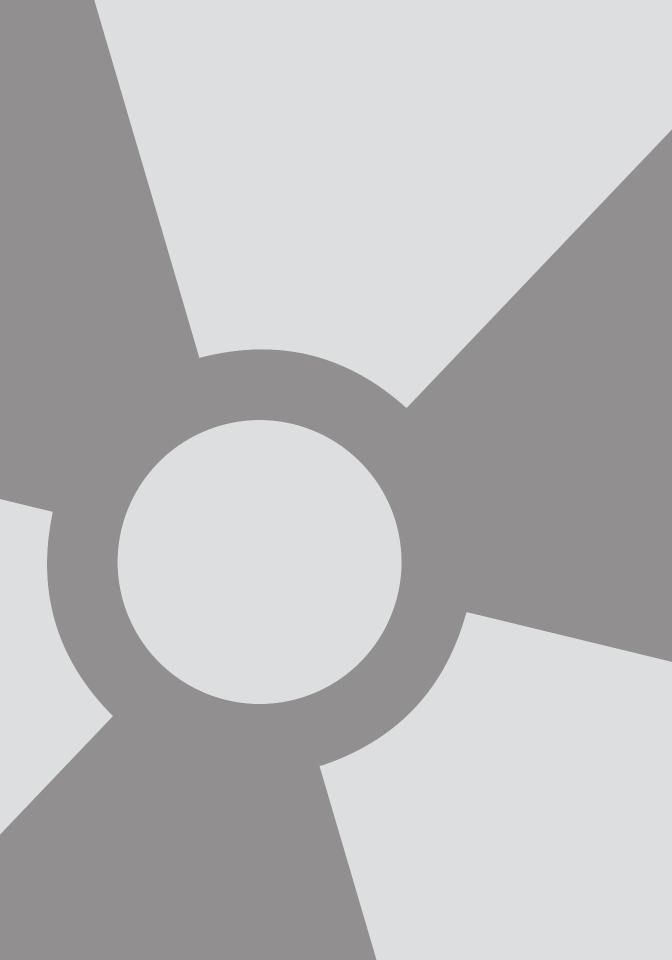
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# PAKISTAN'S STRATEGIC CULTURE AND DETERRENCE STABILITY ON THE SUBCONTINENT

*Rasul Bakhsh Rais*

Strategic culture affects broader issues of national security and strategy, including perceptions of reality and responses to these perceptions. Strategic culture might be defined as the cumulative representation of attitudes toward security problems. These attitudes then shape policy formulation, options, and choices. Pakistan's strategic culture has mixed characteristics of malleability and hardiness. Its central elements include countering Indian dominance, supporting the primacy of national security, taking pride in Muslim sovereignty, and relying on proactive means of national defense.

This essay begins by discussing the concept of strategic culture and how the key elements of Pakistan's strategic culture have affected national discourse and actions. Next, I review writings on Pakistani strategic culture, and then explore key elements of the culture, along with their adaptability and durability. Finally, I turn to the implications of the key elements of Pakistan's strategic culture on deterrence stability on the subcontinent.

## Theory and Concept

The concept of strategic culture is rooted in the study of political culture, whether or not political culture has any bearing on the development of democracy; the promotion of social capital; and, more importantly, whether there are links between culture, economic development, and modernization.[1] There exists a conservative, deterministic view of how strategic culture shapes thinking with regard to security policy choices. In this generalized view, culture, having evolved over a long period of time, defines the attitudes of people, leaders, and institutions toward politics, power relations, and the world at large.[2] From this perspective, "culture matters" in terms of economic and political outcomes, a society's successes, failures, achievements, or collective decline.[3]

An alternative view holds that culture is not an independent factor but is malleable, reflecting varying influences during given points of time. Strategic culture can retain familiar elements and incorporate new dimensions as circumstances and the politics of a country evolve. In this view, culture influences politics less than politics shape the culture of a society.[4] This liberal view of the relationship

between culture and politics, including military strategy, makes politics an instrument of change. Political vision for the state can result in use of the requisite material and resources to move policy and society toward that vision, for every modernized country is a consequence of political vision and national mobilization.[5] Culture can evolve over time with material changes via the politics of social and economic change.

One key question is whether cultural attitudes and the national imagination or vision of the state and society facilitate or pose barriers to positive change. No clear boundary exists between culture and politics to show when and whether a distinctive change in strategic thinking has taken place. In Pakistan, strategic culture has remained fairly static, although the potential for change is present. Only determined charismatic leadership, consistent policies, and public support toward such an enterprise can modify persistent elements of strategic culture. Change is possible, but it will not be easy or dramatic. Instead, changing the key elements of Pakistan's strategic culture, if it changes at all, will be an incremental process. Furthermore, Pakistan's strategic culture will retain primary characteristics that are embedded in the civilizational stream within which they have evolved. History, tradition, religion, and national narratives are deeply woven into Pakistan's strategic culture.

Pakistan's strategic culture therefore has mixed characteristics of malleability and hardiness. Its resilience comes from the civilization within which it has grown, giving Pakistanis self-assurance, pride, and the ownership of lives lived in some conformity with value and belief systems. Since cultures have evolved within civilizational contexts, this path-dependency makes them durable. Change occurs in a highly interactive, globalizing world, while culture retains essential features and identity markers. Strategic culture changes in a continuum, in partial and incremental ways over generations. Strategic culture also has amorphous qualities with many complex elements. Change-oriented leaders can bring and have brought into play those elements to advance political, narrow, or national policy goals.[6]

Strategic culture affects broader issues of national security and strategy, including perceptions of reality and responses to these perceptions. Strategic culture might be defined as the cumulative representation of attitudes, belief systems, values, thinking, and behavior of a country's security community toward security problems, challenges, strategic environment, threats, and perceptions of an adversary or adversaries. These factors shape policy formulation, options, and choices. Our understanding of strategic culture also is informed by academic literature.[7] Early writings on strategic culture dwell on patterns of strategic thinking by those who interact with the strategic environment and make secu-

rity decisions.[8] Assumptions about an adversary's identity and intentions, what capabilities it possesses, and the choice of appropriate strategic responses are essential elements of strategic culture.

What forces shape strategic culture? How is strategic culture retained and how does it evolve over time? How closely does strategic culture reflect reality? How is reality blurred by the interplay of domestic and international factors? First and foremost, strategic culture is influenced by the history of interaction with the state or states that constitute the main focus of national strategy. Strategic culture is situated on an amity-enmity spectrum, where historical events, contentious issues, and incidents intersect. The strategic thought and behavior of states reflects their cumulative experience; experience defines national security goals and threat perceptions. This history of interactions constitutes a dense profile of attitudes that override sporadic or ordinary events. Not all hostile events have the same intensity or leave equally deep marks on the national psyche. Wars and territorial disputes with zero-sum stakes leave the deepest marks, reinforced by the durability of hostile interactions. Under these circumstances, change in hardened attitudes may require transformative change in one of the states, reconciliation through a political settlement, a new salience of economic realism, and/or the subordination of emotional issues to urgent, practical needs.

Apart from the basic, perhaps more enduring principles of political realism — a convergence of interests — the pull and push of civilizational factors cannot be discounted. Patterns can change through interactions with a culturally differentiated and divided world. The "march of civilization" is a composite historical process in which many religious streams, histories, traditions, and cultures play out. Samuel Huntington's well-debated thesis on the "clash of civilizations" is far too simplistic.[9] For instance, how much is Pakistan historically a part of an Islamic civilization, and how is it part of the Indo-Islamic civilization rooted on the subcontinent? The idea of Pakistan does not reflect its composite roots. Instead, it is the sum total of a nationalist narrative and nationalist history writing projects. Equally important are factors that include self-imagining, selective rejection of the past, and the search for new relational points on the basis of a common religion or civilization. The balance of power, or its absence, the correlation of forces, and the approximate strategic environment are constant factors that weigh heavily on the minds of security communities. Dyadic power relations with disproportionate capabilities reinforce inferences drawn from negative experiences for the weaker state.

What perpetuates a specific strategic culture, and can strategic culture change? The most important influence in either case involves organizational factors. The

key institutions within the state — the military, foreign office, and the political executive — exert the greatest influence, although in varying degrees. Over time, security organizations develop an institutional interest to authenticate and perpetuate key elements of strategic culture. Organizational cultures, worldviews, and dispositions toward adversaries perceived as posing clear and immediate threats do not change easily. Change might require shifts in the balance of power within the decision-making process. Given the history of civil-military relations in Pakistan, this may appear unlikely.

The gap between a strategic culture's depiction of reality and reality itself is an important issue that has been debated in the scholarship on international politics.[10] The larger the gap, the more likely it is to result in placing the wrong emphasis on certain policies and in making utterly bad choices with disastrous consequences for a nation's polity and security. Mistakes are replicated because the strategic culture mindset may not be receptive to or may misinterpret positive signals from an "adversary."

## Literature on Pakistan's Strategic Culture

The literature on Pakistan's strategic culture is limited, and generally focuses on institutional influences on shaping, retaining, and defending national security policy. The security community in Pakistan is dominated by the military. The literature on Pakistan's security is naturally focused on relations with India, wars, nuclear weapons, deterrence, and deterrence stability. This literature provides a sound foundation to explore strategic beliefs, security challenges, actors, and institutions shaping strategic discourses and thinking.[11]

One of the first works on strategic culture in Pakistan is an essay by Hasan-Askari Rizvi in an edited volume, *South Asia in 2020: Future Strategic Balances and Alliances*.[12] Rizvi identifies five key influences: troubled relations and a deep sense of insecurity with respect to Afghanistan and India, distrust of India, opposition to Indian domination of the region, Pakistan's search for security, and the connection between Islam and strategic thinking. These influences can be reduced to only three: strong perception of a hostile regional environment, the imbalance of power with India, and the roots of Pakistan's strategic thinking in Islam. Rizvi argues that "emphasis on strategic culture doesn't totally exclude the role of other considerations, such as realism, professionalism and organizational imperatives."[13] These factors are intrinsically tied to the cognitive process through which the core aspect of national strategic culture emerges. Rizvi does not address the relative weight and influence of different national actors, con-

stituencies, and institutions on Pakistan's perceptions. India has remained at the center of Pakistani security narratives, and not just in military circles. This view has a wide ownership, including the major political parties, the media, and dominant intellectual elites.

Muhammad Tehsin writes about two sources of Pakistan's strategic culture. The first emanates from Islamic identity and disposition of the elite, the society, and political actors in the society. This manifests in support for Islamic causes such as the liberation of Kashmir and aiding Palestinians in their struggle against Israel. The second important source for Tehsin is Pakistan's geopolitical environment and threat perceptions from India and Afghanistan.[14] A major contribution on this subject comes from Feroz Hassan Khan. He explains Pakistan's strategic culture by examining a different slate of factors. In his view, historical experience, image of the self, image of the adversary, experience with strategic alliances, and the role of nuclear weapons have greatly influenced the strategic thinking in Pakistan.[15]

Western writers have also analyzed Pakistan's strategic culture. The most prominent and prolific among them is Stephen P. Cohen, who wrote the first comprehensive study of the Pakistan army. His pioneering work focuses on the country's British heritage, institutions, thought processes, connections with Islam and society, and how these elements have influenced the strategic thinking of military leaders.[16] He argues that "distrust of India is a fundamental assumption, no more subject to question than is the very existence of Pakistan" among military officers.[17] In his view, Pakistan's security dilemma is complex because of troubles with neighbors, notably India, which is many times its size and power. Pakistan has sought to counter India by entering into alliances with the West. Finding that protection inadequate, it developed nuclear weapons.[18] While embracing Western theories of war and deterrence, Pakistan has integrated them with Islamic ideas and symbols, a trend Cohen finds more pronounced in the third generation of Pakistani military officers.[19] In Cohen's view, three elements are central to Pakistan's strategy: offensive defense, internationalizing disputes with India, and strategic defense or deterrence.[20]

Peter Lavoy, another outstanding scholar of security and defense issues, identifies similar themes. He considers the key elements of Pakistan's strategic culture to be opposition to Indian hegemony, primacy of defense requirements, nuclear deterrence, acceptance — but not reliance — on outside assistance, and identification with conservative Islamic causes.[21]

Christine Fair's *Fighting to the End: The Pakistan Army's Way of War* adopts a highly reductionist approach to the complex factors that have shaped the identity, power structure, internal imbalances, and view of India as a hostile power. In Fair's judgment, Pakistan's strategic culture is the sum total of the military's view of itself as the "defender of the ideological frontiers" of Pakistan. Fair argues that the strategic culture of Pakistan military is driven by ideological considerations, not by security. In her view, Pakistan's military holds an unalterable "revisionist" approach to India. [22] Her thesis is too mono-causal, however; no single institution or factor determines a country's strategic culture.

## Key Elements of Pakistan's Strategic Culture

Most Pakistani writers have drawn from Rizvi's essay and have endorsed his view of the core elements of Pakistan's strategic culture, somewhat modifying or paraphrasing his list. [23] These central elements might be characterized as countering Indian dominance; supporting the primacy of national security; taking pride in and harboring grievances regarding Muslim sovereignty; and relying on a proactive defense posture, most recently manifested in Pakistani nuclear posture. Each of these is discussed below.

### Countering the Indian Threat

India has remained at the center of Pakistan's security thinking since the eruption of the Kashmir conflict after the establishment of the independent states of Pakistan and India. When Muhammad Ali Jinnah pressed his demand for an independent Pakistan, he sounded optimistic about relations with India, saying, "We join together as good friends and neighbors and say to the world, 'Hands off India.'" He even contemplated proclamation of a "Monroe Doctrine" to protect the subcontinent against "all outsiders."[24] Jinnah's vision of cordial relations with India was effectively interred when India annexed the larger part of the princely state of Jammu and Kashmir, including the Muslim-majority Kashmir Valley.[25] After independence, communal violence, the transmigration of millions of people from both sides on the basis of religion, and untellable atrocities committed during the exchange of populations sealed adversary images.[26] The partition of British India drew "lines of fire and blood,"[27] leaving deep wounds that have shaped the foreign and national security policies on both sides.

Pakistan's narrative of India is one of injustice over Kashmir, non-reconciliation with the idea of a sovereign Muslim state, and unending hostility because Pakistan separated itself from India.[28] These ideas run deep in the society within which political leaders, army officers, and the bureaucrats are raised to assume

important roles in decision-making. The wars over Kashmir in 1948 and 1965 as well as Indian military intervention in East Pakistan in 1971 have deeply affected the socialization process in Pakistan, painting India as an imminent threat to Pakistan's existence. The East Pakistan tragedy (in which the Pakistan military and major political leaders, along with a state-building process that ignored regional peculiarities and legitimate aspirations, played significant roles) is offered as a proof of "evil" Indian intentions.[29] Pakistan's national outlook toward the outside world is built around the concept of India as an unalterably hostile enemy.

The dominant discourse in Pakistan is that of a fundamental contest with an India that seeks paramountcy or regional hegemony, leaving Pakistan with no other option but resistance and strategic defiance.[30] The outcome of this rivalry remains unsettled. India has not been able to compel Pakistan to accept facts on the ground and the status quo in the disputed region of Kashmir. Nor has Pakistan been able to weaken India's growing power or the status quo in Kashmir. Pakistan has moved away from a centuries-old view of itself as connected to India, gravitating toward an identity that in civilizational terms is more Islamic than territorial or Indo-Islamic. Pakistan's Islamic identity now sustains its efforts to counterbalance India. In addition, Pakistan's Islamic identity allows for openings to India's large Muslim population.

How long will Pakistan be able to counterbalance the Indian quest for regional domination? The costs of Pakistan's counter-Indian-domination policy are growing alongside internal security concerns, and as geopolitics, economics, and military capabilities tilt in India's favor. Pakistan's enmity with India faces growing shortfalls in capacity and resources, and the anti-India focus does not help Pakistan in confronting serious social and economic challenges to stabilize democracy and win what appears to be a costly and long war on terror.

Strategic culture is based on perceptions and values with a deep historical trajectory; it adjusts slowly when harsh realities come into conflict with elemental assumptions. Pakistan's security planners continue to view India through the prism of past wars. They have an exaggerated sense of optimism about meeting the India challenge at high cost and by all means. At the root of this raw determination is a unique sense of the nation's destiny as a powerful, sovereign Muslim state in which Pakistanis take great pride. The idea of Pakistan as a proud, sovereign Muslim state need not, however, be incompatible with power imbalances, which exist in all other regions. Compatibility would increase with constructive diplomacy, direct economic trade, and pragmatism on both sides of the Wagah border.

### Primacy of National Security

When the dust of partition settled, it found India uncompromising on the Kashmir dispute, the distribution of financial resources, the flow of canal waters to the Punjab, and the delivery of Pakistan's share of the inheritance of military hardware from the British Raj.[31] Pakistan faced multiple challenges of state- and nation-building without the infrastructure of the state, except for elements of British bureaucracy, army, judiciary, and laws. While groaning under the weight of economic problems and political instability, Pakistan's leaders had reason to believe that India was not reconciled to the idea of an independent Pakistan, and would like to see Pakistan fail.

Given the outcome of partition, Pakistani leaders grudgingly acknowledged political realism. They had no reason to expect benign behavior from India. Nor could they find countervailing support from Muslim lands, from Afghanistan to the larger Middle East. Pakistan could survive only by giving primacy to national security. Otherwise, the constituent regions and diversity of the state could not coalesce. National security and national integrity were indivisible.

Many other postcolonial states faced similar challenges, but few of them achieved independence out of such chaotic conditions, bloodshed, and collective national trauma as Pakistan experienced. Pakistan's set of challenges included holding the two distant parts of the country together as one state under institutional arrangements that would be acceptable to both, and securing itself against a threatening neighbor with vastly more powerful military potential.[32] Owing to these complex linkages between state formation and the regional threat environment, Pakistan was forced to look for patrons as a balancing mechanism. The onset of the Cold War and America's search for allies fit too well with Pakistan's security needs: Pakistan's state formation and its institutional structuring, marked by an imbalance between the civilian power and the rise of the armed forces, were stunted by alliances with Washington.

The evolution of Pakistan's national strategic culture was based on the foundation of perceived or real hostility by India and grievances over Kashmir. Insecurity had domestic causes as well. Internal political developments, instability, the absence of consensus on a constitution, disarray among the political forces, and regional, religious, and ethnic tensions crippled the ability of the new state to develop sound political-military relations and constitutional democracy.[33] In political chaos, the civilian-military elites empowered by ties to the United States captured the power of the state. The narrative of security was no longer the business of the representatives of the people. It was the military,

under the leadership of Pakistan's first Martial Law Administrator, and later President Muhammad Ayub Khan, that made the most important decisions to determine the destiny of the country. These decisions encompassed not only military matters but also domestic politics, economics, and foreign policy.

Pakistan's military leaders have always had domestic allies; the country has never had a pure military regime. The military cultivated a significant part of the traditional elite into the political order. As a result of Pakistan's complex political heritage of democracy, authoritarianism, and the social power of the land-owning and tribal elites, a hybrid system of governance evolved in which the military leader, like the vice-regal system in in colonial days, directed policies from the top. The rise of the military as a powerful institution in the country emerged as an important factor in determining the primacy of national security and the broader contours of the national strategic culture.

Those concerned with establishing and strengthening civilian supremacy over the military in the power structure of Pakistan have shown greater willingness to settle issues with India, including the Kashmir problem. Such initiatives have also come from military rulers. Under very different circumstances, Ayub Khan and Pervez Musharraf engaged with India to settle the Kashmir issue on mutually acceptable terms. Musharraf went beyond any former civilian or military leader in making an argument for a "nonterritorial" solution.[34] However, no single party, leader, or institution in either country is capable of building a national consensus to resolve this dispute. Pakistan will find it difficult to make any solution palatable to the public that has for decades regarded India as the usurper of Muslim regions that rightfully belong to Pakistan — or at least be given the right to self-determination. Absent significant moves to improve relations with India, the primacy of national security and the means to ensure it will remain fixed.

## *Pride in Muslim Sovereignty*

Strategic culture is not exclusively defined by any objective military balance or imbalance, or strategic considerations alone. In the shaping of strategic thought, invisible forces of culture and the character of the society, and the general thought process of the dominant elites, have significant impact. The idea of Pakistan as a sovereign Muslim state is deeply rooted in historical memory. The movement for the creation of Pakistan — the two-nation theory — reflected the fusion of nationalism and Islam. How does this define the cultural base of Pakistan's strategic thinking?

Pakistanis take great pride in seven centuries of Muslim rule over the subcontinent. They have honored Muslim conquerors, whether Arabs, Afghans, or Central Asian Turks, in the writing of national history. In social discourse, Pakistanis venerate figures like Babur, Ghauri, and Ghaznavi, as well as Arab invaders like Muhammad Bin Qasim and symbols of the early period of Islam in Arabia. Pakistani educators carefully preserve and celebrate their conquest of the subcontinent by giving them prominent space in history books. Generations of Pakistani schoolchildren have been socialized to learn about their authentic heroes. Pakistan has named its nuclear-capable missiles after these Muslim heroes and symbols of Islamic power, sending the message that it owns the heritage of their power and accomplishments in the subcontinent. They were victors — and so would Pakistan be in the event these weapons were fired.

The cultural and strategic thinkers behind these ideas have for decades tried to define Pakistan's identity as a Muslim power apart from India, rather than as an integral civilizational, geographic, and cultural part of the subcontinent. The concept of separation has been advanced by Aitzaz Ahsan, a secular lawyer-intellectual who has never been part of Pakistan's security establishment. He makes the point that the civilization of the Indus region has never been part of modern-day India beyond the Wagah border.[35] Historians may reject the assertion that the Indus civilizational area has ultimately defined the boundaries of the two post-colonial states, but the theme of separation resonates in Pakistan. It reflects popular beliefs about what Pakistan is and who the Pakistanis are. Cultural and historical separation has followed the geographical separation from India.

Pakistan's self-image as a proud, sovereign Muslim state reflects the confluence of three streams of thought. First, there is an idealistic stream — of standing up against injustice with a religious resolve and determination when it comes to supporting struggles against the occupation of Muslim lands. This takes expression most strongly in opposition to India's annexation of parts of the old princely state of Jammu and Kashmir, which is regarded as unjust, unfair, and against the principle of self-determination of the peoples of that region.[36] Pakistan has also supported the Palestinian cause against Israel and has supported Indonesians against the Netherlands, Algerians against France, and many other Muslim peoples in their respective quests for independence. Most importantly, this element of Pakistan's strategic culture fueled the struggle to evict Soviet forces from Afghanistan. Pan-Islamic sentiments among the Muslims of the subcontinent play a great role in shaping and sustaining this faith.

A second wellspring of pride is fostered by an optimistic view of Pakistan as a "pivotal" Muslim state occupying a very strategic location at the junction of

three regions — South Asia, Central Asia, and Southwest Asia.[37] In contemporary times, Pakistan sees itself as a corridor or gateway to Central Asia and China. Pakistanis take pride in their armed forces, the largest among Muslim countries; their nuclear weapons; and their status as the second-most populous Muslim country. In this imagining, Pakistan has a role to play well beyond the subcontinent to the broader Muslim world. Despite limitations of resources and many dependencies, Pakistan continues to entertain this ambition, which is most evident by its partnering with pro-Western Muslim states in the Middle East.

The third wellspring of pride is projected culturally and politically as an expression of divine will. This pride is considered both a culmination of the struggle of Muslims from creating a strong self-belief as a separate community within India, a nation within a nation; and also a miracle, given the hardships of independence. Pakistan is often referred to as a *Mumlaqat-e-Khudadad*—a divine gift of power and sovereignty to the peoples of the constituent regions. These ideas greatly feed into the strategic culture of Pakistan, making defense of the country equivalent to a religious duty that transcends secular sentiments of territoriality and territorial nationalism — which stands in contrast to many other countries.

## Reliance on Proactive Means of National Defense

As the weaker state against an adversary with far greater military capacity, Pakistan's national security posture has been structured so as not to allow India to dictate the terms of military engagement. Instead, a good offense has been viewed as the best means of national defense. This key element of Pakistan's strategic culture — adopting a proactive defense posture — has been manifested in conventional military plans and the utilization of nonstate actors. Pakistan's approach to nuclear deterrence also reflects the imperative of not allowing a conventionally advantaged India to compel Pakistan to take unwanted actions or to defeat it in warfare.

Pakistan maintains a costly, robust, conventional war-fighting capability designed to counter Indian conventional military advantages. To deny the Indian army incursions into territory where major cities, defense infrastructure, and lines of communication are situated close to the Indian border, Pakistan depends on agility and quicker mobilization timelines. Pakistan has adopted a three-pronged strategy of "offensive defense." First, it seeks to enable quick and formidable deployment of forces to the border with the capacity to strike first with massive force. Second, to effectuate this strategy, Pakistan has continuously upgraded, and indigenized, conventional arms production to reduce reli-

ance on foreign equipment. Third, it incorporates tactical nuclear weapons with conventional capabilities. Pakistan's conventional military posture of offensive defense consumes a large share of the country's budgetary outlays.[38]

Subconventional warfare — such as insurgencies, low-intensity warfare through proxies and nonstate actors, armed struggles by ideological and social groups, and guerrilla warfare — are another means of offensive defense. Pakistan, like other states in the region and around the world, has incorporated low-intensity warfare doctrines to strain the military resources of an adversary. The struggle to evict the Soviet Union was premised on raising the cost of remaining in place to an unacceptable level. This strategy worked, but not without serious blowback effects on Pakistan and regional security. Pakistan's security managers then replicated these tactics in Kashmir, taking advantage of post-Afghan jihadi culture to keep a significant number of Indian forces tied down in counter-insurgency operations. India responded with a strategy of overkill, alienating Kashmiris further by human rights violations, draconian anti-terror laws, and disappearances. Although India has kept firm control over the Kashmir Valley, an atmosphere of uncertainty and unease continues to prevail. Pakistan has paid a heavier price than India for aligning with and sponsoring militant groups in support of its strategic objectives toward Afghanistan and India.

The imperative of counterbalancing India's natural advantages with a strategy of offensive defense carries over to Pakistan's nuclear posture. Pakistan's acquisition of nuclear weapons is viewed as a matter of necessity and circumstance: A vastly more powerful India in conventional war-fighting capability, with superior economic and technological resources, could only be deterred by nuclear weapons. Pakistan had to be defended at any cost against India, and once nuclear capabilities were within reach they were deemed critical to compensating for growing conventional imbalances and unchanging threat perceptions. The lowest point in Pakistan's history — the loss of East Pakistan in the 1971 war with India, when 90,000 soldiers were taken as prisoners — would never be repeated.

Pakistan's alliance with the United States did not prevent the dismembering of the country. Its friends in the Muslim world and international institutions were also of no help. Political realism dictated the necessity of self-reliance, and the most powerful means of self-reliance was nuclear weapons and their means of delivery. All of the key elements of Pakistan's strategic culture converged on the necessity of nuclear deterrence and a nuclear posture that would keep Indian leaders off-balance. Pakistan's nuclear posture manifests the primacy of national security, pride in Muslim sovereignty, reliance on proactive means of national defense, and opposition to Indian dominance.

Nuclear weapons are a core identifier for Pakistan. Zulfikar Ali Bhutto rhetorically defended the pursuit of the Bomb as a civilizational right for Islam. No symbol of power is more powerful for Pakistan, and Pakistan's military stewards have pursued nuclear capabilities with a clear sense of purpose. These weapons are now integral to defense planning.[39] The acquisition of nuclear capabilities has taken on a dynamic character, embracing full spectrum deterrence and tactical nuclear weapons. The latter are declared to be for use against Indian conventional formations when they are employed offensively — even inside Pakistani territory, if necessary. Ambiguity about choices, capacity, and employment doctrine are maintained to keep the adversary guessing.

Possession of nuclear weapons, tactical capability to deploy such weapons in battlefield situations, and maintaining the first-strike option are important ingredients of Pakistan's strategic deterrence: These postulates reflect Pakistan's reliance on offensive defense in the nuclear domain.

## Strategic Culture and Deterrence Stability

In South Asia, the "prisoner's dilemma" has been accentuated by other dilemmas. Deterrence stability between Pakistan and India is challenging because of asymmetries of power, close proximity, a record of misreading each other's intentions, and a history of war and crises. Deterrence stability is even harder to achieve because of the key elements of Pakistan's strategic culture.

Rivalry between India and Pakistan has been endemic, resulting in wars, proxy wars, border clashes, and crises. Pakistan has devoted significant national, technological, and scientific resources to achieve security equilibrium with India and to deter India from taking aggressive actions. This strategic competition has had destabilizing effects on Pakistan, straining its resources and heightening internal security dilemmas. The conventional military imbalance with India is growing, leaving two options to reinforce an offensive defense posture. One — reliance on subconventional warfare — has proven to do more harm than good for Pakistan. The other — strengthening nuclear deterrence — will remain a big challenge for Pakistan.

Nuclear deterrence works — until it fails. On the subcontinent, it could fail catastrophically if India's leaders miscalculated and if Pakistan's nuclear bluff was called. Nor is the balancing of weapon system by weapon system an affordable option for Pakistan. The widening gap in conventional capabilities will call into question the credibility of Pakistan's nuclear posture, since the first use of nuclear weapons will pose an existential threat to both combatants. Pakistan will

be placed in an untenable position if it uses nuclear weapons first in a military confrontation triggered by subconventional warfare against India.

Pakistan's nuclear posture of offensive defense poses serious problems of deterrence stability. The integration of tactical or short-range nuclear-capable delivery systems into a conventional defense of Pakistan adds serious problems of horizontal and vertical escalation. The probability that Pakistan will use nuclear weapons is commensurate to the size of a concentrated Indian armed attack against vital territorial space. The loss of command and control, the risks of unauthorized use, and the probability of accidents grow as nuclear weapons are situated closer to combatants.[40]

Unlike the superpower rivals during the Cold War, India and Pakistan continue to avoid nuclear stabilization talks — India more than Pakistan. For its part, Pakistan links nuclear risk-reduction measures to the conventional military balance, a linkage that India is unlikely to accept. Nuclear confidence-building measures are no substitute for strategic stabilization talks that have never been seriously pursued. The measures so far negotiated are minimal, and arms control negotiations are hard to envision. Indian strategic culture seems to believe in bleeding Pakistan white; Pakistani strategic culture believes it can afford a strategic competition. Under these circumstances, the strategic environment of South Asia will be characterized by uncertainty and instability.

The rivalry of the subcontinent, as between the superpowers, has been played out in proxy wars. Nuclear capabilities provide the backdrop to subconventional conflicts. Pakistan maintains thick dossiers of evidence of Indian involvement in the East Pakistan crisis and Balochistan. India can provide equally strong evidence of Pakistani hand in northeastern states, and notably in the Kashmir valley. Strategic cultures that value putting one's adversary on the defensive present many destabilizing challenges. Low-intensity conflicts can intensify and expand to direct confrontation, as was the case during the "Twin Peaks" crisis of 2001-02. These tactics cede state control to nonstate actors, as is evident in how Pakistan's erstwhile allies in Afghanistan have taken up arms against the state. These tactics have kept the strategic environment on the boil, resulting in a hardening of attitudes and continuous feeding into the climate of rivalry.[41] They invite uncontrolled escalation.

In the case of Pakistan, the strategy of defending Muslim sovereignty has generated a religious zeal that makes accommodation difficult without major concessions from India over Kashmir, which is unlikely. The quest for a Kashmir settlement and the failure to achieve one reinforce jihadi sentiment. The fusion of religious

and national sentiment cultivates a sentiment of self-sacrifice and fosters a private jihadi culture with boomerang effects on Pakistan's internal security.

## Durability and Adaptation of Strategic Culture

Jeffrey Lantis argues that strategic culture is subject to change under two conditions. In his view, external shocks can test traditional worldviews and modes of thinking. Objective realities can also challenge long-held beliefs when security managers conclude that key elements of strategic culture have lost relevance for national purposes.[42] The 1971 war had a profound impact on Pakistan's strategic thinking — reinforcing India's enemy image and prompting a search of security independence by means of nuclear weapons. The American-led war in Afghanistan has also had profound effects on Pakistan — first by the embrace of jihadi groups by national security managers to dislodge Soviet forces, then by their redirection to punish India, followed by the recognition of the harm these groups have done to the state and society. These examples suggest that the key elements of Pakistan's strategic culture may have durability, but that adaptation is possible.

Belief systems are also at work in the way Pakistan is viewed externally. Pakistan watchers have a hard time accepting two major shifts in security policy — reducing covert support to Kashmiri militants and jettisoning the construct of "strategic depth" in Afghanistan. As a consequence of this shift, the Afghan Taliban are no longer receiving backing from Rawalpindi. A third major shift — combating the Pakistani Taliban — is beyond dispute.

Pakistan's strategic culture and threat perceptions are evolving. The hierarchy of threats has been re-ranked in light of objective security conditions in Pakistan since 2007, when military action was taken against the Lal Masjid and acts of violent extremism within the country spiked. A review conducted by Pakistan's Inter-Services Intelligence (ISI) concluded — for the first time since independence — that domestic militants posed a two-thirds-greater threat than India.[43] This assessment preceded the June 2014 Taliban attack on the Karachi airport and the massacre of schoolchildren in Peshawar in December 2014.

Public opinion and strategic thinking in Pakistan underwent a paradigm shift particularly after the Peshawar massacre. Anxieties about India have not dissipated and could readily grow, but public opinion in Pakistan now considers the Taliban to be a greater threat (52 percent) than India (45 percent).[44] Army Chief of Staff Gen. Ashfaq Parvez Kayani signaled this shift in his Independence Day speech on August 14, 2012, declaring that "the fight against extremism and

terrorism is our own war and we are right in fighting it."[45] His successor, Gen. Raheel Sharif, reiterated this shift by taking the fight into North Waziristan and by stating, after the Peshawar school massacre, that the Pakistan Taliban had "hit at the heart of the nation….our resolve to fight terror has taken a new height."[46]

Three key elements of Pakistan's strategic culture — the primacy of national security, pride in Muslim sovereignty, and reliance on proactive means of national defense — remain unchanged; they are now being applied to internal security threats in a more concerted fashion. This shift is a result of the objective reality that Pakistan is in a long war against religious extremism and terrorism. Its armed forces have been fighting a war in the northwest frontier for almost a decade. Pakistan has suffered more than 20,000 civilian casualties and more than 6,000 security personnel casualties between 2003 and 2015.[47] At issue is what kind of state Pakistan wants to become. Its social and economic fate depend on the outcome of this reconstruction project.

The fourth key element — countering Indian dominance — hasn't gone away, as is evident from Pakistan's nuclear modernization programs. This fourth element is, however, being gradually displaced by internal security and economic concerns. The process of displacement can be accentuated or stymied depending on how India deals with Pakistan.

Another major change is Pakistani strategic thinking toward Afghanistan, which has been greatly facilitated by the change in leadership from Hamid Karzai to Ashraf Ghani. This, too, has been little appreciated in the West. Pakistan's security managers have concluded that a Taliban government in Afghanistan would not be in Pakistan's security interests. The return of an Afghan Taliban regime would likely result in cross-border miseries for Pakistan, while stoking the Pakistan Taliban militancy within Pakistan itself. Pakistan's national security managers understand that its armed forces cannot defeat and destroy the Pakistani Taliban operating from safe havens in Afghanistan without the cooperation of Kabul.[48] Consequently, Pakistan is dealing directly and negotiating with a new sense of purpose with Kabul, and no longer views the Taliban insurgency as a lever of influence against the Kabul government. Pakistani policy encourages the Afghan Taliban leadership to negotiate with Kabul, and has encouraged national reconciliation by means of a peaceful settlement with the Taliban. The statement by Chief of Army Staff Raheel Sharif that "Afghanistan's enemy is Pakistan's enemy" reflects this shift from Pakistan's approach.[49] Once again, three of Pakistan's key elements of strategic culture — the primacy of national security, pride in Muslim sovereignty, and reliance on proactive means of national defense —

remain unchanged, but they are now being applied in a more effective manner toward Afghanistan in response to pressing internal security threats.

What about the fourth key element of Pakistan's strategic culture — countering the Indian threat? Will Pakistan's traditional outlook toward India change? Other traditional adversaries, especially in Europe, have become close economic and security partners. Three pivotal states on the subcontinent — Bangladesh, India, and Pakistan — were once part of the same empire and the same Indo-Islamic civilization. Mohammad Iqbal, the poet philosopher and dreamer of Pakistan, wrote powerful poetry about Hindustan as a patriotic Indian. Can sovereign independent states manage to re-weave strands of common heritage to forge more normal ties? Changes will be slow, but they are possible with a high degree of statesmanship.

Changing the dynamics of Pakistan's strategic culture toward India will require a historic agreement over the disputed Jammu and Kashmir region that is acceptable to both countries as well as to the Kashmiris themselves. Previous efforts toward this end have been halting and easily sidetracked. If a settlement can be reached, it will have to address Pakistan's insistence that the status quo is unacceptable and India's insistence that territories not change hands.[50] Two governments in Pakistan — one led by Prime Minister Nawaz Sharif (1997-1999) and the second by his rival, Gen. Pervez Musharraf (1999-2008) — attempted to negotiate "out of the box" settlements with the Bharatiya Janata Party (BJP) government.[51] A renewal of the pursuit of a Kashmir settlement will depend on political courage. Progress can be facilitated by small trust-building measures, including the further opening of trade and creating a web of economic interdependencies. So far, stubborn strategic beliefs have taken primacy over pragmatic economic thinking. A Kashmir settlement awaits transformative changes in Pakistan's strategic thinking and concomitant changes in the Indian outlook toward Pakistan.

Pakistan has adapted to the vastly changed regional and international security climate after the 9/11 terrorist attacks against iconic US targets. It will, however, be much harder for Pakistan's security managers to apply the same techniques to India as are now being applied to Afghanistan. Slight changes are nonetheless apparent. Pakistan's security managers are moving slowly away from giving material support to Kashmiri militants or allowing militants to cross the Kashmir divide. They recognize that the old strategy of supporting proxies has had devastating repercussions in the spread of jihadi culture and the loss of state control. The extent to which these lessons learned apply to Kashmir remains unsettled.[52] Indian threat perceptions have not diminished as internal security threat perceptions have grown.

## Conclusion

India believes it can bleed Pakistan in a nuclear arms competition, while Pakistan thinks no price is too high for national defense. Pakistan's security managers assert that the country's nuclear weapons are not only affordable but also cost-effective, and that sunk costs have not broken the back of the economy. These assertions are not persuasive. A nuclear arms competition with a more powerful adversary is not a winnable option for Pakistan, especially in light of the growing Indian strategic partnership with the United States. The credibility of Pakistan's nuclear deterrent with second-strike capability is an achievable goal in the near- and mid-terms, but some options to strengthen deterrence, such as nuclear weapons delivered by short-range and sea-based systems, add serious risks as well as costs.[53] Confidence-building and nuclear risk-reduction measures are insufficient. Progress on the composite dialogue is halting, even when talks are underway. Neither side appears ready to tackle major issues in dispute.

Both countries have fought proxy, secret wars using separatists and insurgents to do their bidding. Pakistani officials cite good evidence of Indian involvement in the 1971 East Pakistan crisis and in Balochistan. Indian officials accuse Pakistan of fueling unrest and insurgencies in the Kashmir Valley and in other trouble spots. Nuclear weapons have exacerbated these grievances. Subconventional, low-intensity warfare can escalate to direct confrontation. Proxy wars are dangerous as they cede the control of the state to nonstate actors, further widening the gulf between India and Pakistan, hardening attitudes, and feeding the rivalry.[54]

At present, strategic competition is a geopolitical fact of life between India and Pakistan. Neither the forces of globalization nor economic realism have reduced the salience or primacy of Pakistan's security imperatives.[55] Defiance against India is rooted in Pakistan's regional outlook and strategic thinking. Significant resources have been devoted to building indigenous defense infrastructure and nuclear capacity for this purpose, as have partnerships with the United States and China.[56]

The key elements of Pakistan's strategic culture have had enduring influence in its dealings with India, contributing to instability, uncertainty, and the potential for another clash. To balance the Indian threat and to defend Muslim sovereignty, Pakistan has entered into alliances and strategic partnerships with the United States and China. These partnerships have helped Pakistan raise its level of defense preparedness, modernize its defense forces, and create a better sense of national security. Despite cautionary messages from its partners, Pakistan

still pursued a proactive defense strategy of employing subconventional warfare against India. Proactive defense is now reflected in a nuclear posture that gives credence to the first use of nuclear weapons. Pakistan's nuclear capability gives it a sense of national pride and self-assurance, at the cost of greater instability and an accelerated nuclear competition.

The essential elements that constitute the strategic culture of Pakistan are durable but also adaptable. Factors that might lead to adaptation include economic imperatives, the cost of competition with India (both externally and internally), and the realization of the escalatory risks associated with a growing dependency on nuclear weapons to counterbalance India. A political settlement of the Kashmir dispute — if and when that is conceivable — could have the greatest impact on changing Pakistan's strategic culture.

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# INDIA'S STRATEGIC CULTURE AND DETERRENCE STABILITY ON THE SUBCONTINENT

*Sarang Shidore*

India and Pakistan have been engaged in a crisis-prone rivalry ever since their independence from British rule in 1947. The injection of nuclear weapons into this rivalry has introduced the dynamic of nuclear deterrence to the region, giving it several characteristics resembling the US-Soviet Cold War.[1] Deterrence theory was developed during the Cold War based on rational actor models of behavior. This work added important insights by including the impact of cultural variables. A key such variable is strategic culture.

The aim of this essay is to delineate key aspects of Indian strategic culture and explore their impact on deterrence stability on the subcontinent.[2] It seeks to answer the following questions: What are the key components that best describe Indian strategic culture? Is Indian strategic culture immutable, and if not, how and why is it changing? What implications do the answers to these questions have on deterrence stability on the subcontinent?

The essay begins by summarizing existing work on Indian strategic culture, including specific contributions in the nuclear weapons realm. I argue that India possesses a distinctive strategic culture consisting of three ideational frameworks that constitute its central strategic paradigm, and five core elements at the operational level with respect to nuclear weapons and security relations with Pakistan. The three ideational frameworks are realism, moralism, and liberal globalism, while the five operational strategic elements can be described as nuclear minimalism, firm civilian control over the military, preservation of the territorial status quo, strategic restraint, and strategic autonomy. Moreover, Indian strategic culture is not static but possesses a dynamic characteristic. The relative strength of each of its strategic paradigms has changed over time, and these shifts have manifested themselves in two of the core operational elements relevant to Pakistan: nuclear minimalism and strategic restraint. These developments are likely to negatively impact deterrence stability in the region.

## Strategic Culture: History and Theory

Strategic culture is a variable encompassing a set of beliefs and modes of thinking among the policymakers and strategic elite of a state that shape its response to security challenges and threats. It is therefore a variable that is ideational rather than material, and domestic rather than emanating from the structure of the international system. As beliefs and modes of thinking are influenced by experience and events, strategic culture is also historically shaped.

The concept of strategic culture can be traced to Jack Snyder in his influential study of Soviet nuclear strategy.[3] Snyder and other so-called "first generation" strategic culture scholars[4] were a part of the neorealist tradition, which gave primacy to the structure of the international system. They introduced strategic culture as an intervening variable, rooted in the deep history and formative experiences of a state, that modified the state's behavior, thereby leading to suboptimal responses to changes in the structure of the international system. They also treated strategic culture as "semipermanent" — effectively constant during the period of interest. Although strategic culture was seen by the first generation as supplementing, not supplanting, neorealism, the introduction of an ideational variable was a significant departure in a neorealist theoretical tradition that had until then almost exclusively focused on material variables.[5]

The constructivist contributions to international relations theory led to a proliferation of literature in ideational drivers of security.[6] The constructivists were particularly interested in state identity as a key variable. They argued that the interests of states are not a given, but prefigured by identity. Identity is not seen in essentialist terms; instead it is constructed through a process of socialization.[7] The dynamics of the socialization process, argued to have the potential to transform actor identities and interests, was a major theoretical innovation, and a departure from a neorealist understanding of interests as an exogenously imposed constant.

Several influential case studies of military organization and practice utilizing the constructivist lens, for example by Jeffrey Legro[8] and Elizabeth Kier,[9] incorporated strategic culture as the core explanatory variable. In a key departure from Alastair Iain Johnston's approach, many constructivists saw strategic culture of a state as being not semipermanent but subject to change through recent history and contingency. This treatment introduced a certain temporal dynamism into the concept of strategic culture, which, while rejecting the essentialist tinge of first-generation studies, also avoided treating strategic culture as simply an instrumental product of elite interests.

Johnston, in a seminal study of Chinese military doctrine, contributed a new rigor in the analysis of strategic culture.[10] He attempted to locate Chinese strategic culture through a deep analysis of classic texts to which elites and strategic thinkers had been exposed throughout much of Chinese history. Analyzing Ming China, Johnston came to the conclusion that two Chinese strategic paradigms existed, one of them dominant in practice and the other an idealization.

Johnston's work was marked by several noteworthy methodological characteristics.[11] First, he departed significantly from the first generation by treating strategic culture as an independent (rather than intervening) variable, separable from material variables, whose existence could be proven independently of state behavior — thus addressing the problem of tautology in first-generation studies. Second, he viewed strategic culture as generating a set of ranked preferences to guide choice. However, Johnston continued to treat strategic culture as semipermanent, rooted in the deep history of a state, as the first generation had done.

This essay takes Johnston's definition of strategic culture as a basis for its arguments, but also incorporates constructivist insights with regard to processes of ideational change. Johnston defines strategic culture as follows.

> Strategic culture is an integrated system of symbols (i.e., argumentation structures, languages, analogies, metaphors, etc.) that acts to establish pervasive and long-lasting grand strategic preferences by formulating concepts of the role and efficacy of force in interstate political affairs, and by clothing these assumptions with such an aura of factuality that the strategic preferences seem uniquely realistic and efficacious.[12]

Johnston further divides strategic culture into two levels.[13] The first consists of the *central strategic paradigm*, embodying core assumptions about the strategic environment along three axes — the role of war (inevitable or an aberration), the nature of an adversary and its threat (zero-sum or variable-sum), and the efficacy of the use of force. More than one central strategic paradigm can exist in a given state. The second level is the *operational level*, which embodies the choice of grand strategies to meet defined threats in the environment; in other words, high-level policy preferences, such as offense over defense, that drive a state's behavior. The symbolic and linguistic element in strategic culture is key, as these are the means through which meaning and preferences are communicated across time and space and contribute to its persistence.

## India's Strategic Culture: Contemporary Debates

Several scholars and practitioners have investigated Indian strategic culture over the past few decades. Notably, some have cast doubt on whether India has a strategic culture in the first place. George Tanham, in an essentialist-oriented essay, famously asserted that India lacked a strategic culture as a result of its deep-rooted Hindu worldview of "life cycles and repetitions."[14] Other analysts have made arguments in a broadly similar vein. Sandy Gordon wrote that the Hindu caste system inhibited coordination and planning, and stymied the development of a strategic culture.[15] Former India Foreign Minister Jaswant Singh blamed Hindu pacifism, Gandhi's nonviolence, and a lack of territorial consciousness to explain why, in his view, independent India "abandoned the centrality of strategic culture."[16] K. Subrahmanyam, among the foremost Indian strategic analysts, argued that "our government ... has had no strategic culture, and has never thought and planned ahead and never offensively."[17] Popular commentary in international news magazines has also agonized over the alleged lack of a strategic culture in India that inhibits robust military responses to Chinese and Pakistani threats.[18]

A more voluminous body of literature, however, holds the view that India, like most states, has indeed been characterized by a strategic culture. Several investigations have examined deep history to excavate strategic practices of the Indian state. Swarna Rajagopalan examined the influence of the great Hindu epics *Ramayana* and *Mahabharata* on Indian grand strategy, and observed echoes of the ancient concept of *dharma*, or right and proper conduct, in modern India's propensity for framing itself in moral terms in international affairs.[19] *Dharma*, however, was not a strict moral code, but a context-sensitive concept that depended on the time and the individual in question.

Other researchers analyzed the work of ancient political theorist Kautilya and its relationship to the modern Indian state.[20] The Kautilyan concept of *raja-mandala* approximates in some form strategies of power and balances that are the focus of neorealist theorizing. Stephen Rosen's work on the causal effects of Indian social structures on its military efficacy and readiness argued that deep divisions in Indian society have carried over to the Indian military and have thereby limited its capacity for generating military force and projecting power.[21] An analysis of Mughal India's strategic behavior under Emperor Akbar saw the predominance of accommodationist strategies to expand the Mughal imperium, although coercive strategies were more prominent in regions distant from the capital.[22] The existence of two strategies in ancient

India was noted: a realist one following the Kautilya, and a moralist one centered on the concept of *dharma*.

While these civilizational analyses are insightful from a historical standpoint, it is doubtful whether they apply to modern India. The territory of the present-day Indian republic has been politically unified only episodically in its history. India's history has also been subject to major political discontinuities. There is little evidence that Chanakya or the ancient Hindu epics were read and followed by, for example, Mughal or British strategists.

Scholarship that has interrogated the formative era of the independence movement and the foundation of the republic in the 20th century may therefore be more relevant to gaining an insight into Indian strategic thought.

Stephen Cohen, in analyzing the Indian strategic worldview, wrote of a Nehruvian consensus in the early decades after Indian independence characterized by a strong idealism with a dash of realism.[23] This "moderate Nehruvian" consensus broke down after the trauma of defeat in the 1962 war with China, and was replaced with the "militant Nehruvianism" of Indira Gandhi with its Kautilyan elements. Other strands of Indian strategic thought also became more prominent from the 1980s onwards, including realism.

A simultaneous examination of formative history of the republic and more recent trends has characterized the work of some strategic culture scholars. Kanti Bajpai's work identified six major strands in India's strategic thought, the more influential ones being Nehruvian, neoliberal, and hyperrealist.[24] Nehruvians, according to Bajpai, are mainly distinguished by an emphasis on communication and contact as a means of transforming adversaries into allies, and a strong commitment to keeping great powers out of the affairs of the subcontinent. Neoliberals see trade and economic liberalization as a means to pragmatically improve conflictual relations with neighbors and welcome the role of one particular great power — the United States — as an Indian partner, aiding India's rise on the global stage. Hyperrealists take the most nationalistic stance of the three, believing that force and balance of power have significant roles in Indian foreign policy, and that India should ultimately aim to become a great power itself through a conscious process of militarization and assertion of its national interests. Bajpai also contended that neoliberals had the upper hand in current Indian strategic practice. Bajpai's analysis was illuminating in that it was among the first to clearly identify broad schools of thought in the Indian state in contemporary times. However, it did not focus on linking these schools of thought specifically to behavior.

Other scholars also saw neoliberal frameworks as being influential in more contemporary Indian grand strategy. Raja Mohan argued that India was moving away from nonalignment, and beginning to establish closer relationships with western countries, particularly the United States.[25] He argued that the end of the Cold War had given both states the opportunity to realize that they shared democratic values, and had convergent interests in certain strategic areas. This development, he claimed, "constituted a fundamental change of course" for India.[26] In my analysis of the post-Cold War India-Iran relationship, I saw the growing influence of neoliberal thinking in Indian grand strategy, with its origins in the abandonment of economic autarky starting in the early 1990s.[27] I argued that this shift in orientation, though partial and limited, had begun to challenge older Nehruvian narratives in spheres beyond the economic.

Two recent studies, rather than theorizing the totality of Indian strategic culture, have instead focused on its specific facets. Vipin Narang and Paul Staniland examined the endurance of strategic autonomy in the discourse of Indian leaders since Nehru.[28] The study argued that this principle was one way to guard against a historically validated risk of an alliance turning into domination, and retained a strong presence in Indian strategic culture. Sunil Dasgupta and Stephen Cohen argued that a deeply held doctrine of strategic restraint exists in Indian security policy, with its roots in the worldview of the Indian independence movement.[29] They pointed to several pieces of evidence demonstrating strategic restraint — including the long delay between its first nuclear test and overt weaponization, and the lack of a military response after the 2008 Mumbai attacks. They concluded that India's strategic restraint was likely to be preserved, in spite of continuing pressures from the fraught relationship with Pakistan.

## India's Strategic Culture: The Nuclear Dimension

Five noted studies have attempted to link the evolution of Indian strategic culture to nuclear deterrence. Bajpai argued for three contending schools of thought among those in India who supported the 1998 tests and have embraced the logic of deterrence, whom he called rejectionists, pragmatists, and maximalists.[30] These schools closely shadowed the three streams of Indian strategic culture he had proposed earlier, the Nehruvian, neoliberal, and hyperrealist (noted above). Bajpai saw the pragmatist school ascendant, with its relaxed approach to deterrence emphasizing uncertainty, advocacy of no first use, strong backing for arms control over disarmament, commitment to a moratorium on further testing, embrace of Fissile Material Cut-off Treaty (FMCT) negotiations, and export controls. However, Bajpai also indicated that Indian policy could veer in the preferred direction of the maximalists in the future.

Rajesh Basrur conducted a perceptive theoretical and empirical analyses of Indian nuclear policies through the framework of strategic culture, which utilized an examination of written texts and oral interviews of key Indian military and civilian elite.[31] He made a case for strong continuity in a policy of nuclear restraint since independence, a continuity that had persisted despite an increasingly adverse external environment, and strong domestic pressures for escalation of the nuclear program. Basrur's historical investigation, aided by the work of prior authors,[32] led him to argue that Indian leaders took only small, incremental steps toward eventually embracing nuclear deterrence, when neorealist theory predicts that they would have nuclearized much faster. The lag could be best explained, according to Basrur, as being due to an Indian strategic culture on nuclear weapons that he termed "nuclear minimalism."

Nuclear minimalism framed nuclear weapons as nonusable and only relevant as a political tool for ensuring Indian security, and displayed a high tolerance for policy ambiguity. Basrur emphasized, as further pointers to nuclear minimalism, the nondeployed nature of India's arsenal and the initiation of arms-control agreements with Pakistan preceding official weaponization in both countries.

In her examination of India's nuclear policy through a lens of strategic culture, Deepa Ollapally argued that a fundamental Indian dilemma has been a major mismatch between its desired ends and limited means.[33] As a fragile and poor state, newly independent India's rational choice would have been to align itself with one of the superpowers, given that it would come with a security umbrella and financial largesse. However, Indian idealism in seeking the third way of nonalignment was considerably driven by a strategic culture rooted in the uniqueness of its freedom struggle. This had a direct impact on Indian nuclear policies, which, in confronting an increasingly adverse and nuclear-armed security environment after the mid-1960s, displayed an "ambiguity rather than clear-cut choices" and "a tolerance for contradictions."[34] The resultant Indian understanding of nuclear weapons, according to Ollapally, was framed in political rather than military terms.

Itty Abraham argued that Indian defense and nuclear scientists specifically have exerted inordinate pressure on nuclear policy. He called this group the "strategic enclave."[35] The strategic enclave works in a culture of high secrecy and minimal accountability, and has had a disproportionate influence on the creation of capabilities for weapons and delivery vehicles. Some of these arguments are also found in George Perkovich's work on the history of the Indian nuclear weapons program.[36] Perkovich contended that the drivers for Indian weaponization were found less in external security threats than in domestic politics and a desire for global status.

## India's Strategic Culture: A New Understanding

Departing from Tanham and Singh, I propose that there is clear evidence in Indian security thinking and practice, particularly relating to the nuclear program, of an identifiable, distinct Indian strategic culture. The factors that shape India's strategic culture include, but are not limited to, the foundational ideas of the Indian freedom movement, the trauma of the 1962 China war, the continuing tense rivalry with Pakistan, and international pressures on nuclear nonproliferation.

Taking Johnston's approach as the point of departure, I argue below that Indian strategic culture is constituted at two levels. The first is a central strategic paradigm, formed by three ideational frameworks — moralism, realism, and liberal globalism. The second is at the operational level, consisting of five core elements of grand strategy — nuclear minimalism, firm civilian control over the military, preservation of the territorial status quo, strategic restraint, and strategic autonomy.

Table 1: India's Three Central Strategic Paradigms

|  | Moralism | Realism | Liberal Globalism |
|---|---|---|---|
| Role of War | Rare and only under extreme circumstances | Common structural feature of international system | Occasional and limited |
| Nature of adversary | Nonzero sum | Zero sum | Nonzero sum |
| Efficacy of use of force | Ineffective and counterproductive in most circumstances | Often effective if means and ends are coherent | Effective in some bounded circumstances as a deterrent |
| Grand Strategy Emphasis | Values | Hard Power | Economics |
| Philosophical orientation | Optimistic | Pessimistic | Utilitarian |
| Modern-day Norm Entrepreneurs | Jawaharlal Nehru, Mahatma Gandhi | Vallabhbhai Patel, Indira Gandhi | P. V. Narasimha Rao, Manmohan Singh |

## *Central Strategic Paradigm*

The central strategic paradigm forms the ideational bedrock of a strategic culture. It provides a coherent set of assumptions about the strategic environment by answering three questions: What is the role of war? What is the nature of an adversary and its threat? How efficacious is the use of force? Evidence for the presence of a central paradigm ought not to rest on behavior (to avoid repeating the errors of tautology of the first-generation analysts[37]), but is to be deduced from the discourse of the members of the strategic elite and norm entrepreneurs. Three central strategic paradigms can be discerned in the Indian strategic discourse — moralism, realism, and liberal globalism (see Table 1).

## *Moralism*

Moralism is the foundational paradigm of the Indian state, rooted in its civilizational ethos and anti-colonial, nonviolent independence struggle.[38] This worldview lays stress on principles rather than power politics, is reluctant to use force, and has historically tended to back causes that favor the Global South.

Moralism as a strategic culture element has a long history in Indian discourse and action. Jawaharlal Nehru was the key norm entrepreneur who laid the foundations of Indian moralism.[39] Nehru's extensive writings regarding colonialism and the lopsided world order, his concept of nonalignment as an ideational response to the Cold War, and his championing of nuclear disarmament laid the foundation of moralism in independent India's foreign policy. Subsequent Indian leaders continued to support many of these causes, at least in rhetoric. Modern-day Indian moralism is predicated on a strong pride in the greatness of India's ancient civilization, a continuing identification with causes related to equitable global development, adherence to no first use (NFU) status, and continuing rhetoric on global nuclear disarmament.

Indian moralism is also strongly wedded to the idea of state sovereignty, a concept that traditionally has been associated with realism. Thus contemporary moralist themes in the United States and the European Union such as the responsibility to protect have found few sympathizers among Indian policymakers across the political spectrum.

## *Realism*

A tradition of realism is also salient in Indian thinking.[40] It sees India as a great-power-in-the-making, and readily contemplates the use of force in order to ensure security in a dangerous neighborhood. The influence of realism was

evident even during moralism's apogee in the Nehruvian era. India's military actions in Kashmir, Hyderabad, Junagadh, and Goa were evidence of New Delhi not hesitating to use force when the situation was seen to demand it.

The difference between offensive and defensive versions of realism can be found in the Indian debate.[41] Offensive realism in India, focused on power maximization and dismissive of international institutions, emphasizes state sovereignty and decisional autonomy, and is generally opposed to the international nonproliferation regime.[42] Defensive realism, however, adopts a more internationalist lens, and looks favorably toward the United States as a possible force-multiplier aiding India's rise. Defensive realism argues that strategic autonomy ought to be replaced with the concept of responsibility in order for India to gain influence in the global order.[43] It also embraces soft power, such as international aid programs, as a means for expanding Indian influence.

Offensive realists are more inclined to respond punitively to any terrorist acts originating in Pakistan. Defensive realists, while not skittish about using military power, are more inclined toward reaching an accommodation with Pakistan through the use of economic tools, with their overarching strategic goal for India to emerge as a great power beyond the constraints of South Asia. In broadening its understanding of power to include economic power, defensive realism often finds common cause with liberal globalism.

*Liberal Globalism*

Liberal globalism in the Indian context[44] is rooted in the salience attached to economic growth. It places a high priority on integration with global and regional regimes of trade and capital. It sees furthering trade and investment as vital means to increase national influence and reduce the risk of conflict. The roots of liberal globalism lie in economic policy, specifically a major transformation of India since the early 1990s from a state focused on an autarkic model of import substitution and economic self-reliance to one eager to integrate with global regimes of trade and capital.[45] Liberal globalism's high priority on global integration means that it sees state security predominantly through the lens of (and often subservient to) economic security.[46]

Liberal globalism's framing of Pakistan is distinctly utilitarian. It sees the current minimal economic interdependence between the two countries as a factor in the continuation of subcontinental tensions. It strongly supports initiatives such as reducing tariffs and eliminating nontariff barriers, opening up energy and service sectors, instituting a liberal visa regime for ease of business, and

accelerating two-way trade by as much as an order of magnitude from current levels.[47] More broadly, liberal globalists see the security problem with Pakistan as a subset of a wider failure of regional integration in South Asia.

Central strategic paradigms manifest themselves by generating, strengthening, or weakening operational elements, or changing their preference ranking in a state's menu of behavioral choices. The clear tensions between India's three central strategic paradigms raise the question as to their relative influence on the operational elements of grand strategy. There is no a priori reason for assuming any one of the three paradigms outlined above is always dominant in driving Indian grand strategy at all times. The constructivist lens alerts us to the possibility that history and contingency may enhance or retard the influence of each at different times. There is also the possibility that a subset of these paradigms exists only at an idealistic level, and has little impact on operational elements.[48]

## Operational Elements

The three central strategic paradigms outlined above find their expression in actual state behavior through their core operational elements. Core elements are embodiments of the grand strategic principles of the state.[49] They represent the means by which the central paradigms are put into practice.

Five core elements constitute the operational level of Indian strategic culture with respect to nuclear weapons and Pakistan — nuclear minimalism, firm civilian control over the military, preservation of the territorial status quo, strategic restraint, and strategic autonomy. These core elements reflect influences from one or more of the central strategic paradigms.

## Nuclear Minimalism

Nuclear minimalism encapsulates the idea that India is a reluctant nuclear power that sees nuclear weapons in predominantly political terms that signal its emerging great-power status and ensure stable deterrence against adversaries. It does not see nuclear weapons as tools for war-fighting.

At its outset, India was implacably opposed to nuclear weapons, and nuclear disarmament emerged as a key focus of Indian diplomacy during the earliest years of the independent republic. However, the crushing Indian defeat in the 1962 war and the six Chinese nuclear tests during 1964-1967 rattled India, and presented it with a severe security challenge. While an embrace of rapid weaponization would be the prediction of standard deterrence theory, India agonized over the response, and initially focused on getting security guarantees from

existing nuclear powers other than China.[50] When the United States tied security guarantees to a disavowal of nonalignment, India abandoned seeking such guarantees — but it did not weaponize either, though an incremental step was taken toward a nuclear weapons program.

The first nuclear test in this reluctant nuclear journey came only in 1974. Yet India avoided labeling its test as a weapons test, and stopped short of overt or covert weaponization. It took roughly another 15 years for India to actually manufacture a weapon[51] and another 24 years to conduct meaningful tests as an overt nuclear power. After overt weaponization, India showed little urgency for setting up a nuclear command, which was constituted only after another five years.

India continues to maintain a de-mated posture, provides an NFU guarantee, has not inducted tactical nuclear weapons, and generally emphasizes the deterrent nature of its weapons rather than their potential use as a means to actually fight and win a nuclear war. India's nuclear doctrine includes a "massive retaliation" clause in response to any nuclear attack. Since massive retaliation would be of questionable credibility in response to, say, the use of a small battlefield weapon by Pakistan against Indian troops on Pakistani soil, India's continued and stubborn adherence to no first use reiterates an underlying assumption that Indian escalation dominance and Pakistan's geographic vulnerability give India the deterrence it needs with respect to that neighbor's nuclear threat. This effectively rules out any war-fighting utility of the Indian deterrent in the event of an actual conflict. Hence there is no need to spell out a more granular series of responses in the doctrine in the event of a use.

India's nuclear minimalism is largely a product of the central strategic paradigm of moralism. It represents the contemporary version of independent India's championing of nuclear disarmament — a moralist idea that serves as a powerful symbol for Indian strategic thought transmitted over decades in Indian discourse. This symbol remains persistent to this day — for example, India's draft nuclear doctrine dedicates a significant portion of its text to the issue.[52] Moralism is also a driver for India's NFU guarantee, support for a Fissile Material Cut-off Treaty, and the post-1998 de facto moratorium on nuclear testing. However, India's eventual embrace of nuclear weapons is also an example of the paradigm of realism at work in adapting national security policy to a difficult external security environment.

*Firm Civilian Control over the Military*

Firm civilian control over the military has been a strongly enduring feature of India's security architecture. There is a wide consensus in India that the military, while providing valued inputs, ought not to make the final calls on key nuclear and national security decisions. The military's role in security and nuclear decision-making is minimal, limited to operational aspects.

Nehru instituted the nuclear energy program as a civilian initiative, with the scientists of the Atomic Energy Commission solely in charge. The weapons initiative was an offshoot of the energy program, and to this date remains firmly out of the hands of the military. The civilian role in the nuclear weapons program is divided between the defense and nuclear scientists (the strategic enclave), bureaucrats, and the political leadership, with the military only in control of the physical delivery vehicles.[53] However, this power is concentrated in the executive branch — the Parliament has been virtually absent on nuclear questions, having debated the topic only four times since independence.[54]

The overwhelming dominance of civilians in Indian security policy probably has its roots in the lack of an armed component in the Indian independence movement, Nehru's deep distrust of the military, and his heightened wariness toward its role after the 1958 military coup in Pakistan.[55] The resultant security governance structures set in place by Nehru largely persist to this day, and exclude the military from security policymaking.[56] Nuclear warheads are under the control of the strategic enclave of nuclear and defense scientists, while civilian bureaucrats at the Ministry of Defense have a significant say in conventional defense policy.

Though there is no question that the strategic enclave is highly influential in creating capabilities, evidence indicates that all critical steps in India's nuclear pathway were taken as a result of decisions by the political leadership.[57] This includes the decision to keep the nuclear door open by Nehru; the nuclear tests in 1974 and 1998 by Indira Gandhi and Atal Vajpayee, respectively; the decision to restart the weapons program in the early 1980s by Indira Gandhi; actual weaponization in the late 1980s by Rajiv Gandhi; and the veto of the Comprehensive Test Ban Treaty (CTBT) by a politically weak Prime Minister Deve Gowda.

Political leaders also made decisions *not* to take certain steps along this pathway, in the teeth of opposition from the strategic enclave — most notably Indira Gandhi's decision to refrain from weaponization or further testing after 1974, and Narasimha Rao's cancellation of a planned test in 1995. In some of these cases, prime ministers were relatively isolated as both defense scientists and

bureaucrats had opposing preferences. Nevertheless, the final call was always made by the prime minister, sometimes aided by a very small number of hand-picked civilian advisors.

Civilian control in India also extends to key decisions on conventional use of force, which in the Indian-Pakistani context are potentially prime triggers for escalation to nuclear use. For example, Atal Vajpayee ordered the massive Indian troop buildup (Operation Parakram) in 2001-2002 and instructed the military to prepare for war, without consulting the military on the decision. He ultimately ordered a demobilization, in spite of the military's deep opposition, even though many of India's stated demands had not been met by Pakistan.

Moralism's imprints can clearly be seen in the importance India attaches to civilian control over the military and security policy in general. The sanctity of civilian control springs from a democratic culture established in the earliest years of the republic, in which elected representatives are seen as paramount, and any military seizure of power is viewed as a threat to the core values of the state and society.

## Preservation of the Territorial Status Quo

India is fundamentally a territorially satisfied state. Although it has contested borders with Pakistan, it does not actively seek the annexation of new territory, and the preservation of the status quo on its borders has been a key element of its grand strategy.[58] One marker of this is India's attitude toward the Line of Control (LoC) that divides Kashmir. India has been largely unassertive in pursuing its claims on the Pakistani-administered portion of Kashmir (with a quarter of undivided Kashmir's population). New Delhi has done very little to regain what it considers a part of its territory, as contrasted to Pakistan's herculean efforts at regaining the Kashmir Valley from Indian control.

A complete military victory in the 1971 war did not lead India to annex all or part of Pakistani-administered Kashmir. Another indicator is the Kargil crisis in 1999, when Pakistani troops intruded deep into Indian-held territory in northern Kashmir.[59] The goal of the Indian military and political response was to restore the sanctity of the LoC. India did not attempt any incursions of its own into Pakistani territory. Once the status quo ante had been restored through a combination of military and diplomatic means, Indian forces ceased action.

India's focus on preserving the territorial status quo aids its military's generally defensive posture. It discourages the pursuit of strategies of "offensive defense" and "offensive offense." This is further aided by the nuclear deterrent, which

is seen as an insurance policy against any Pakistani adventurism or coercive strategies in the conventional plane.

The influence of moralism is evident in India's emphasis on preserving the territorial status quo and its lack of interest in annexing new territory held by Pakistan. However, the realist paradigm has also been present in Indian thinking on territorial integrity. Shortly after independence, Vallabhbhai Patel, a realist thinker and the second-most powerful Indian politician after Nehru, was instrumental in forging military action taken in the crises over amalgamating the kingdoms of Hyderabad and Junagadh (whose rulers were presumed to have affinities toward Pakistan), thus creating a territorially contiguous India. In contemporary times, realism engenders a fierce resistance to making any territorial trade-offs or concessions with Pakistan. This has been a factor in the failure of past attempts for the resolution of territorial disputes such as Siachen in Kashmir or Sir Creek on the Gujarat-Sindh border.

## Strategic Restraint

Strategic restraint in Indian security policy is largely borne out by the empirical record with respect to Pakistan. India's response to point provocations such as terrorist attacks has traditionally been overwhelmingly diplomatic rather than military. Repeated provocations through subconventional attacks by militants backed by Pakistan have not yet led to offensive, punitive Indian military action. India has also been restrained in its conduct of war, seeking defeat of the enemy but not its destruction. Military action is generally undertaken only when circumstances are strongly favorable.

Aspects of the 1971 war with Pakistan demonstrate an offensive streak in Indian strategy.[60] On the other hand, in the aftermath of what was a total and decisive military victory, India withdrew all its troops from the former East Pakistan, quickly released all Pakistani prisoners of war, initiated peace talks with Pakistan at Shimla, and refrained from pressing its advantage by annexing a part or all of Pakistani-held Kashmir. In 1983, Indira Gandhi refused to approve an airstrike aimed to destroy the nascent Pakistani nuclear program after she was presented with plans to do so by the Indian military, at a time when a Pakistan-backed insurgency was raging in the state of Punjab.[61]

The Kargil War in 1999 was an excellent example of restraint. Although India upped the ante by deploying air power, cross-LoC air operations were not initiated to dislodge Pakistani troops from the heights they were occupying even though they would have substantially reduced Indian casualties.[62] During the

conflict, India also resisted the temptation to expand the war horizontally, across the LoC or to the International Border.[63] The next major incident, the hijacking of an Indian civilian airliner by Pakistani militants to Taliban-controlled Afghanistan in December 1999, ended with the extraordinary spectacle of the Indian foreign minister personally escorting three top militants previously in Indian jails to Kandahar in order to trade them with the airplane passengers.[64]

There was no Indian retaliation after a massive wave of bombings on commuter trains in Mumbai in 2006, though India blamed the Pakistani group Lashkar-e-Taiba. In the aftermath of the 2008 Mumbai attacks carried out by Pakistan-based militants, which lasted four days and killed 163 people, there is no evidence that the Cabinet Committee on Security seriously considered a military response.[65] During the border clashes on the LoC in 2013, initial Indian government statements demonstrated de-escalatory intent by implying that the attacks on Indian troops were led by Kashmiri militants rather than actual Pakistani troops.[66]

Three cases, however, raise questions about Indian restraint with respect to Pakistan — Operation Brasstacks in 1986-87, India's nuclear tests in May 1998, and Operation Parakram in 2001-2002 — and require a more detailed discussion. Operation Brasstacks was a massive military exercise ordered by Indian Army Chief Gen. K. Sundarji in 1986, during the height of the Pakistani-aided insurgency in Punjab. Pakistan interpreted it as a cover for a massive Indian invasion. Then commander of India's western front, Gen. P. N. Hoon, wrote in his memoirs that Brasstacks was aimed to start a fourth war with Pakistan. Yet an exhaustive study of the crisis concluded that the exercise was not meant to start a war but to send a warning.[67] It may be concluded that Brasstacks included an element of a coercive strategy, but restraint remained the key Indian mode of dealing with a serious Pakistan-backed militancy.

India caught most of the world off-guard when it tested five nuclear devices in May 1998. The tests came only two years after 158 members of the UN General Assembly approved the CTBT, and Indian policymakers were aware that a new round of testing would trigger US economic sanctions. Many observers therefore perceived the tests as an exemplar of a new Indian assertiveness.

However, the nuclear tests and the associated declaratory status came as many as 34 years after China's overt detonations in the wake of India's devastating defeat in the 1962 war, and approximately 15 years after India concluded that Pakistan had inducted nuclear weapons into its arsenal. Thus the more pertinent question is not so much why India tested in 1998,[68] but rather why it took

so long for India to respond to major, adverse shifts in its strategic environment, when conventional deterrence theory would predict a far quicker nuclearization pathway. From this standpoint, India's long delays in testing and an overt embrace of a deterrent are in fact a marker of strategic restraint as a persistent element in its grand strategy.

After a major terrorist attack on the Indian Parliament in December 2001, India ordered Operation Parakram, mobilizing hundreds of thousands of troops on the Pakistani border, explicitly threatening war. India eventually stood down 10 months later, in spite of Pakistan not acceding to most of its demands. Though other factors such as nuclear deterrence, the slowness of the Indian buildup, and US intervention probably played a critical part in Indian decision-making, there is also evidence that India was prepared to initiate hostilities.[69] Again, however, the Indian strategy of compellence through armed buildup stopped short of actual military action.

Although some of India's actions such as Parakram and Brasstacks represent a flirtation with the abandonment of strategic restraint toward Pakistan, they have not, as yet, led to any actual punitive military action that involves Indian troops crossing the LoC or the International Border. Indian strategic restraint at least partly explains the fact that Pakistan has had a consistent, well-funded policy of arming and training subconventional actors such as Lashkar-e-Taiba against a nuclear India, even as there is no evidence that India currently uses the same tactic against a nuclear Pakistan. India also has shown a consistent behavior of returning to negotiations after each crisis with Pakistan. In weighing all of the above evidence, the broad conclusion that can be drawn is that India has generally practiced strategic restraint on the subcontinent with respect to Pakistan.[70]

Moralism has traditionally been a prominent driver in India's strategic restraint doctrine. Nehruvian ideas of resolution of conflict through communication influenced the defining of Indian restraint. However, in recent decades, liberal globalism is also a driver for the continued persistence of India's strategic restraint policy even after multiple provocations such as the Mumbai attacks. The sustained high-growth phase of the Indian economy through enhanced foreign trade and investment, and the highest priority accorded across the political spectrum for maintaining this growth, has led to a view that a major conflict with Pakistan carries unacceptable risks to India's prospects for development and security.

## Strategic Autonomy

The principle of strategic autonomy has been a consistent strain in Indian strategic thought ever since the founding of the republic. It is repeatedly invoked by Indian leaders, enjoys wide support across the political spectrum, and is stated unambiguously in the draft nuclear doctrine. The principle owes its genesis to the independence movement and the historical experience of colonialism, when pacts signed by Indian rulers with European powers to aid them against their local enemies turned into a means for their domination and annexation by the very same powers. The grand strategic expression of the principle of strategic autonomy during the Cold War was nonalignment, articulated as a policy of staying clear of the two opposing superpower blocs.

Yet nonalignment did not preclude India from seeking US military aid in the wake of the 1962 China war, or from forging a partnership with a security component with the Soviet Union in 1971. One interpretation of these events is that India effectively abandoned strategic autonomy as a doctrine in the wake of the defeat at the hands of China. A more complex view might be that strategic autonomy was never an absolute principle in the way it has been claimed — it did not rule out tilts in favor of one great power or another when core security interests were threatened. However, it did rule out binding military commitments of the kind exemplified by NATO or the US-Japan security pact.

The recent report "Nonalignment 2.0," authored by a group of prominent Indian strategic analysts, has addressed the strategic autonomy question in some detail.[71] The report contains a perceptive description of India's strategic environment with Pakistan and, to a large extent, China, defined in adversarial terms. It makes a strong case for economic interdependence and deeper integration into the US-led global marketplace as a strategic imperative. However, it rejects military alliances as a means for ensuring Indian security with respect to its adversaries. It also expresses wariness on embracing preferential partnerships in any form that require explicit or implied military coordination aimed at a third power, instead placing its emphasis on internal balancing and acting as a bridge player between the great powers. Thus "Nonalignment 2.0" serves as an exemplar of the continued reluctance in Indian strategic thought of abandoning autonomy in decision-making through a treaty alliance or accepting the role of a junior military partner.[72]

A second facet of Indian strategic autonomy, tied to internal balancing strategies, is a consistent goal of defense technology indigenization since the earliest days of the republic. This has historically led to large expenditures in defense

research and development, though deliverable successes in this effort have been limited and mainly confined to nuclear, space, and missile programs. Nevertheless, India continues to stress technology transfer while negotiating arms deals, maintains a large network of laboratories and defense production plants at home, and has thus far prevented the entry of foreign players as controlling entities in the defense sector.

Thus it may be concluded that strategic autonomy in the Indian context implies that New Delhi is opposed to being a part of a treaty alliance led by a foreign power. Additionally, military self-reliance and technology indigenization are major Indian strategic priorities. Defined in this manner, strategic autonomy is strongly validated as a core operational element of Indian strategic culture.

India's strategic autonomy doctrine is a product of two of its central strategic paradigms — moralism and realism. Indian moralism, with its roots in the struggle for independence and emphasis on self-reliance, accords the highest priority to retaining decisional autonomy and defense technology indigenization. Indian realism, especially offensive realism, emphasizes India's aspirations for great-power status with strategic autonomy as a key means of achieving this goal. Defense indigenization is an integral part of this worldview.

India's strategic autonomy is not absolute, however, and is limited by two factors. The first is a continued reliance on arms imports for much of its military capabilities as a result of the limited success of its efforts toward technology indigenization. The second has emerged more recently through the influence of liberal globalism, and pertains to India's increased and growing interdependence with major trading nations as a means to fuel its economic growth.

## How Dynamic Are India's Strategic Paradigms?

Recall that the strategic culture of a state is not fixed but rather subject to evolution through history and contingency. Nevertheless, the strong effects of path-dependence imply that any changes in strategic culture must of necessity be slow and measured. Breaking down the strategic culture of a state in terms of its constituent components at two levels, as this essay has attempted to do, allows us to examine this evolution at a more granular level, thus gaining a better understanding of the dynamic processes at work.

The long-term trend that best describes the evolution of India's strategic culture since independence is a decline of the foundational Indian paradigm of moralism and the concomitant rise of realism and liberal globalism. These changes have been slow and not always monotonic, but their overall direc-

tion is unmistakable. Three types of factors explain these shifts — systemic, regional, and domestic. Additionally, advances in technology have acted as facilitators for the shifts.

At the systemic level, the end of the Cold War delivered a shock to the Indian worldview. The collapse of bipolarity raised major questions about the relevance of nonalignment in a unipolar world. Even as the East-West divide dissolved, major changes were also underway in the North-South dynamic. Three decades after decolonization, with regionalism and developmental differentiation gaining in prominence, the idea of a unified Global South no longer appeared to match global political realities. Moreover, new threats such as international terrorism and ethnic conflict were not easily addressed by traditional Indian moralism.

Even as the international system experienced a rupture in the late 1980s, India's regional strategic situation had been steadily growing more difficult. The key contingency in this regard was the shock of the 1962 defeat against China, which energized Indian realist voices for the first time and led to the country's first major military modernization effort. This shock was followed by the Chinese nuclear tests of 1964. Meanwhile, in the aftermath of its defeat in 1971, Pakistan embarked upon a program of nuclearization. By the 1980s India was confronted with two nuclear powers at its doorstep, and major Pakistan-backed insurgencies raging in Punjab and Kashmir. The 1990s brought the rise of terrorism targeted beyond Kashmir, culminating in the Mumbai attacks of 2008. Indian strategy was seen as having generally failed to deter Pakistan's nuclearization and its use of subconventional tools.

Finally, important domestic failures opened the door to changes in Indian strategic thinking. India experienced a growth stall in the mid-1960s that lasted for nearly two decades, even as East Asian economies achieved rapid economic prosperity through export-led policies. Meanwhile, large Indian diasporic communities in the United States transmitted new norms of entrepreneurship and global integration back home that contributed to making economic self-reliance and a suspicion of the US-led international order distinctly unfashionable by the 1990s.

Another factor contributing to the evolution of strategic paradigms was the advance in technology, which (as discussed in the next section) facilitated a less symbolic and more operational view of the Indian nuclear deterrent. The communications revolution also facilitated the evolution of Indian strategic culture by generating denser and faster connectivities for the transmission of global norms to India. Technological advance was not a direct driver in shifts in

Indian thinking, but made operationalizing some of these shifts easier. Realism experienced a net gain in this evolutionary process. India now thinks of itself much more as an actor exclusively pursuing its own interests rather than serving universal causes. Along with a pursuit of self-interest has come a more conventional view of the path to get there — expanding its military and economic reach, and its openness to the use of force. Realism's imprint is seen in several of India's operational elements of grand strategy toward Pakistan. However, realism has thus far acted more to weaken or modify existing elements than engender a coherent and distinct operational element of its own.[73]

Liberal globalism came into its own with the process of economic liberalization and deregulation in domestic politics, the implications of which spilled into the strategic arena. It is difficult to foresee the return of an autarkic state emphasizing import-substitution and withdrawal from the global integration process. However, liberal globalism's rise as a strategic paradigm has thus far had only a limited effect on policies toward Pakistan. India's use of preferential terms of trade as a tool to reduce tensions is one of the few examples. India extended most-favored-nation status to Pakistan in 1996, and consistently pushed for reciprocal arrangements in return. India also promoted the Iran-Pakistan-India gas pipeline. The 2008 Mumbai attacks put on hold a number of planned projects of economic integration.

Though moralism is clearly the biggest loser from the shifts in Indian thinking underway over the past few decades, it is too early to proclaim its demise. Moralism is reflected in practically all of the grand strategic elements discussed above, and the paradigm retains its strength among a number of constituencies in Indian politics. India's strong self-image of an ancient, unique civilization also tends to buttress moralist arguments in Indian discourse.

## Conclusion

The decline of moralism, and the increased strength of realism and, to a lesser extent, liberal globalism are reconfiguring the core elements of Indian grand strategy toward Pakistan. Specifically, nuclear minimalism and strategic restraint are eroding slowly but steadily, even as the other three core elements broadly maintain their strength.

Nuclear minimalism, with its view of nuclear weapons as strictly a political tool, is among those strategic cultural elements under the greatest stress.[74] One sign of this weakening was India's decision in 2003 to dilute its original NFU guarantee by allowing for first-use against chemical or biological attack. Some members of

the strategic elite from the realist camp have also suggested an abandonment of NFU altogether, most prominently former Foreign Minister Jaswant Singh in 2011.[75] Since then, this debate has gone through periodic revivals.[76]

One measure of nuclear minimalism is the size and nature of the deterrent. India is committed to a doctrine of "credible minimum deterrence" but has not precisely defined "minimum." In any case, it is clear that India's nuclear arsenal is growing steadily. India has also reportedly built a new uranium enrichment plant near Mysore, the goal of which appears to be to significantly expand its deterrent capabilities.[77]

Moreover, certain technological developments in South Asia, by qualitatively and quantitatively improving the capabilities and operational modes of nuclear weapons and delivery systems, have facilitated changes in Indian strategic thinking. For instance, India is committed to inducting a complete nuclear triad, with the activation of its sea-based leg scheduled for 2017. Nuclear warheads must necessarily be mated with sea-launched ballistic missiles while at sea, which implies a deployed status. Another advance in India's ballistic missile technology, known as "encapsulation" or "canisterization," in which "the warhead is likely pre-mated to the delivery vehicle," implies a shift to a near-deployed or deployed state.[78] Though these developments do not by themselves amount to a wholesale abandonment of nuclear minimalism, they do indicate a movement away from a strictly political or symbolic interpretation of the Indian deterrent.

Two other indications of the weakening of nuclear minimalism can be seen in highly ambitious Indian plans for a ballistic missile defense (BMD) system, still at a very early stage, and the potential induction of multiple independently targetable re-entry vehicle (MIRV) capabilities. India is currently building a BMD system with Israeli and Russian assistance.[79] BMD shields are perceived to eliminate the threat of mutual destruction, thus generating the belief of a "foolproof" missile defense, which in turn can present first-strike temptations. India's Defence Research and Development Organisation has recently announced that the Agni-VI missile will contain three independently targetable warheads.[80] Though any actual deployment of some of these technologies is probably decades into the future, the announcements themselves send a signal of weakening nuclear minimalism.

The slow but steady ascendancy of realist thought in India has also put considerable stress on the element of strategic restraint. Some strategists, observing the approach of a "defensive defense" as largely having failed to deter Pakistani be-

havior, are advocating a greater offensive component in Indian security strategies.[81] Although India has not carried out punitive action involving crossing the LoC or the International Border since 1971, the threat of war during Operation Parakram and the increased tendency of taking a more proactive stance toward Pakistani infiltration of militants across the border mark a process of weakening in strategic restraint. In the event of a major terrorist attack on Indian soil or an escalating border clash in Kashmir, this will increasingly facilitate direct punitive action by India against Pakistan.

With nuclear minimalism also eroding, the pathways of any subsequent escalation will be easier, especially with high uncertainties about the leverage that can be exercised by the international community. Keeping in mind that stability and instability can be induced by a number of factors beyond strategic culture, these developments nevertheless make for a pessimistic prognosis for deterrence stability in South Asia in the foreseeable future.

## Endnotes

1.  For an analysis of the rivalry through the framework of a cold war see Rajesh Basrur, *South Asia's Cold War: Nuclear Weapons and Conflict from a Comparative Perspective* (London: Routledge, 2008).

2.  The author would like to acknowledge Professor Kanti Bajpai, Rear Admiral Raja Menon, Professor E. Sridharan, and four former senior Indian officials who wish to remain anonymous who kindly made themselves available for interviews.

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5.  Other clusters of theoreticians are represented by Gramscians and poststructuralists. These scholars denied any causal link between strategic culture and state practice, seeing practice at any moment as being driven by material interests of domestic elites rather than a historically shaped repository of beliefs or practices.

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18.  For example, see "Know Your Own Strength: India as a Great Power," *The Economist*, March 30, 2013, 27.

19.  Swarna Rajagopalan, "'Grand Strategic Thought' in the Ramayana and the Mahabharata," *India's Grand Strategy: History, Theory, Cases*, ed. Kanti Bajpai, Saira Basit, and V. Krishnappa (New Delhi: Routledge, 2014), 31-62.

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35.  Itty Abraham, "India's Strategic Enclave: Civilian Scientists and Military Technologies," *Armed Forces & Society* 18 (1992): 231-252. Also see Itty Abraham, *The Making of the Indian Atomic Bomb: Science, Secrecy, and the Postcolonial* State (New Delhi: Orient Longman, 1999), and M. V. Ramana, "India's Nuclear Enclave and the Practice of Secrecy," *South Asian Cultures of the Bomb:*
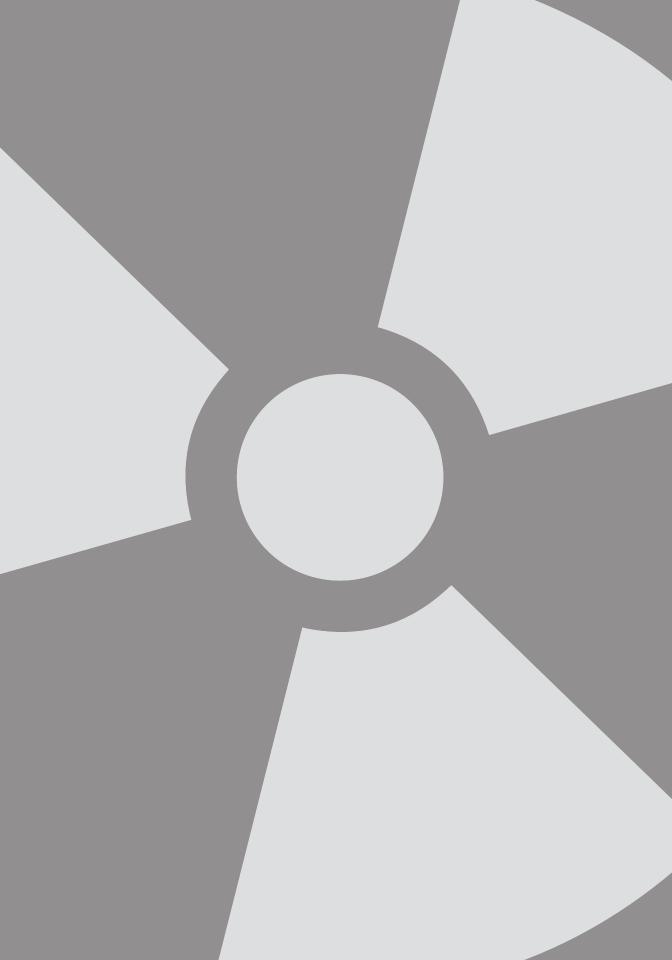
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36.  George Perkovich, *India's Nuclear Bomb: The Impact on Global Non-proliferation* (New Delhi: Oxford University Press, 1999).

37.  Alastair Iain Johnston, "Thinking About Strategic Culture," 42.

38.  The extensive writings of Jawaharlal Nehru are the best source for understanding Indian moralism. Mani Shankar Aiyar and Siddharth Varadarajan are two current analysts articulating aspects of contemporary moralist thought.

39.  Although some of India's strategic behavior during his leadership was consistent with realism (see note 40).

40.  Indian realism is not the product of a single overarching figure. India's first home minister, Vallabhbhai Patel, can be seen as an early realist. In contemporary times, the writings of K. Subrahmanyam, Bharat Karnad, Raja Menon, Brahma Chellaney, C. Raja Mohan, Rajesh Rajagopalan, and Jaswant Singh provide insights into Indian realism.

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43.  C. Raja Mohan, "Rising India: Partner in Shaping the Global Commons," *Washington Quarterly* 33, no. 3 (July 2010): 133-148.

44.  Liberal globalism has been articulated in several speeches of former Prime Minister Manmohan Singh, but also the writings of prominent analysts such as Shyam Saran, Kanti Bajpai, Shashi Tharoor, Shekhar Gupta, Pratap Bhanu Mehta, and much of the work of two New-Delhi-based think tanks, the Indian Council for Research on International Economic Relations (ICRIER) and the Center for Policy Research.

45.  The roots of this transformation lie in the Rajiv Gandhi era of the mid-1980s. See Atul Kohli, "State, Business, and Economic Growth in India," *Studies in Comparative International Development* 42 (2007): 87-114.

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48.  Johnston's study found strong evidence for two central paradigms in Chinese strategic culture: Confucian-Mencian and offensive realist. He concluded that one of them existed only at a level of rhetoric with no appreciable impact on grand strategy. He nevertheless left open the possibility of more than one active central paradigm in non-Chinese strategic cultures.

49.  Grand strategy is typically defined as the harnessing of all elements of national power (military, political, and economic) to achieve security. See Alastair Iain Johnston, *Cultural Realism*, 36, and Paul Kennedy, "Grand Strategy in War and Peace: Toward a Broader Definition," *Grand Strategies in War and Peace*, ed. Paul Kennedy (New Haven, CT: Yale University Press, 1991), 1-10.

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54. Ibid., 186.

55. Verghese Koithara, *Managing India's Nuclear Forces* (New Delhi: Routledge, 2012), 180.

56. Ibid., 179-193, for a detailed description of India's defense management system.

57. See Vipin Narang, *Nuclear Strategy in the Modern Era* (Princeton, NJ: Princeton University Press, 2014), 94-120.

58. India also has a major border dispute with China, in which it has been somewhat more assertive in pursuing its claims — for example, Jawaharlal Nehru's "forward policy."

59. There are numerous analyses of the Kargil crisis. Three good examples are Kargil Review Committee, *From Surprise to Reckoning* (New Delhi: Sage Publications, 2000); Praveen Swami, *The Kargil War* (New Delhi: Leftword Books, 1999); and Peter Lavoy, *Asymmetric Warfare in South Asia: The Causes and Consequences of the Kargil Conflict* (Cambridge: Cambridge University Press, 2009).

60. Such as India's arming and training of East Pakistan's Bengali insurgents, known as the Mukti Bahini.

61. W. P. S. Sidhu, "India's Nuclear Use Doctrine," *Planning the Unthinkable*, ed. Peter Lavoy, Scott Sagan, and James Wirtz (Ithaca, NY: Cornell University Press, 2000), 133. Also see Sumit Ganguly and Devin Hagerty, *Fearful Symmetry: India-Pakistan Crises in the Shadow of Nuclear Weapons* (Oxford: Oxford University Press, 2005), chap. 3.

62. Jaswant Singh, *India at Risk*, 183.

63. See Peter Lavoy, *Asymmetric Warfare in South Asia*, 174.

64. One of the released militants, Masood Azhar, went on to found Jaish-e-Mohammed, a militant outfit responsible for multiple attacks in Kashmir. Another militant, Omar Saeed Sheikh, was responsible for the murder of *Wall Street Journal* correspondent Daniel Pearl in 2002.

65. Author's interview with Rear Admiral Raja Menon.

66. K. Balchand, "Furore as Antony Blames It on Terrorists," *The Hindu*, August 7, 2013, http://www.thehindu.com/news/national/furore-as-antony-blames-it-on-terrorists/article4995836.ece.

67. Kanti P. Bajpai, P. R. Chari, Pervaiz Iqbal Cheema, Stephen P. Cohen, Sumit Ganguly, *Brasstacks and Beyond: Perception and the Management of Crisis in South Asia* (New Delhi: Manohar Books, 1995). Also see S. Paul Kapur, *Dangerous Deterrent: Nuclear Weapons Proliferation and Conflict in South Asia* (Stanford, CA: Stanford University Press, 2007).

68. India did conduct a single nuclear detonation in 1974, but it was still a full 10 years after the Chinese tests. The 1974 test was not billed as a weapons test, did not change India's declaratory status, and did not lead to the actual building of nuclear warheads for a further 14 years.

69.  For a detailed argument that nuclear deterrence was not decisive in ending the 2001-2002 standoff, see Dinshaw Mistry, "Tempering Optimism about Nuclear Deterrence in South Asia," *Security Studies* 18 (2009): 148-182. For a robust debate between deterrence optimist and pessimist points of view in South Asian crises that does not rely on arguments of restraint, see Sumit Ganguly and S. Paul Kapur, *India, Pakistan, and the Bomb: Debating Nuclear Stability in South Asia* (New Delhi: Penguin Books, 2010).

70.  Restraint has not always been part of Indian doctrine with respect to the rest of South Asia. India's introduction of troops into Sri Lanka in 1987 quickly turned into a bloody counterinsurgency campaign against Tamil militants. India used military force in the Maldives to reverse a coup in 1988, and did not hesitate to use a strategy of compellence against Nepal through an economic blockade in 1989. These actions were undertaken in the era of Rajiv Gandhi, whose tenure was marked by an uncharacteristically interventionist Indian policy.

71.  Sunil Khilnani, Rajiv Kumar, Pratap Bhanu Mehta, Prakash Menon, Nandan Nilekani, Srinath Raghavan, Shyam Saran, and Siddharth Varadarajan, *Nonalignment 2.0: A Foreign and Strategic Policy for India in the Twenty-First Century* (New Delhi: Center for Policy Research, 2012).

72.  India's offer to the US in the wake of the September 2001 attacks of the use of its military bases can be read as a puzzling departure from the strategic autonomy doctrine. However, this offer came at an extraordinary moment of acute stress in international politics. Also, the offer was not in the form of a formal military treaty, but rather was limited to any operations against the Taliban regime in Afghanistan, which India saw in strongly adversarial terms after the 1999 hijacking of an Indian airliner to Kandahar.

73.  A Cold-Start-style limited war doctrine, which allegedly forms an integral part of Indian grand strategy, could conceivably be such an element, but its current existence in Indian military planning remains in doubt. Unless such a doctrine is actually operationalized, it would be challenging to identify it as a new core element of Indian grand strategy. See Walter C. Ladwig III, "A Cold Start for Hot Wars? The Indian Army's New Limited War Doctrine," *International Security* 32, no. 3 (Winter 2007/08), and Shashank Joshi, "India's Military Instrument: A Doctrine Stillborn," *Journal of Strategic Studies* 36, no. 4, 512-540.

74.  Nuclear minimalism is itself a transmutation of what had previously been a norm of disarmament followed by that of "recessed deterrence." This evolution is an early marker of Indian realism.

75.  Jaswant Singh, "Revise 'No First Use' Nuke Policy: Jaswant," *Economic Times*, March 16, 2011, http://articles.economictimes.indiatimes.com/2011-03-16/news/28697754_1_nuke-policy-nuclear-policy-warheads.

76.  See B. S. Nagal, "Checks and Balances," *Force*, June 2014; Vipin Narang, "Why India Must Stay the Nuclear Hand," *Indian Express,* April 12, 2014; Gurmeet Kanwal, "India's Nuclear Doctrine: Reviewing NFU and Massive Retaliation," Institute of Peace and Conflict Studies, January 15, 2015; and Abhijit Iyer-Mitra, "India's Nuclear Imposture," *New York Times*, May 11, 2014.

77.  See summary by Stockholm International Peace Research Institute, http://www.sipri.org/research/armaments/nuclear-forces/india.

78.  Vipin Narang, *Nuclear Strategy in the Modern Era*, 103.

79.  Frank O'Donnell and Yogesh Joshi, "India's Missile Defense: Is the Game Worth the Candle?" *The Diplomat*, August 2, 2013.

80.  T. S. Subramanian, "Agni-VI All Set to Take Shape," *The Hindu*, February 5, 2014, http://www.thehindu.com/news/national/agnivi-all-set-to-take-shape/article4379416.ece.

81.  Rajesh Rajagopalan, "Fearing Nuclear Escalation, India Limits Its Response to Pakistan's Provocations," *Economic Times*, August 9, 2013, http://articles.economictimes.indiatimes.com/2013-08-09/news/41240657_1_indian-army-pakistan-islamabad.

# PAKISTAN'S TACTICAL NUCLEAR WEAPONS: OPERATIONAL MYTHS AND REALITIES

*Jeffrey D. McCausland*

In April 2011 Pakistan conducted a test of a new nuclear-capable short-range missile, the Hatf-IX (also referred to as the Nasr). Pakistan's Inter-Services Public Relations Directorate described the Nasr as a "quick response system"[1] designed to support "full spectrum deterrence" by countering India's growing conventional force advantages.[2] The Nasr is reported to have a range of 60 km[3] as well as a terminal guidance system for improved accuracy.[4] The development of short-range nuclear-capable systems such as the Nasr might entail parallel efforts to build small nuclear warheads that could be employed by a variety of new and existing platforms, possibly including cruise missiles and artillery, against advancing Indian conventional forces. Some argue that notwithstanding the small diameter of the Nasr — roughly 1 foot — Pakistan might be pursuing boosted fission, subkiloton-yield devices suitable for use on the battlefield. To have high confidence in such yields, Pakistan might have to resume nuclear testing.[5]

Some might argue that the introduction of short-range ballistic missiles is simply the latest manifestation of an ongoing, but largely stable, arms competition in South Asia. Indeed, India and Pakistan have managed to avoid major conventional or nuclear war in the past decade while doubling the size of their nuclear arsenals. Over time, however, Pakistan's efforts to develop and produce short-range nuclear-capable systems will seriously undermine deterrence stability and escalation control on the subcontinent. The introduction of short-range nuclear-capable systems will also make crisis management more challenging and more imperative than ever. For the United States, given its historic role as crisis-manager in South Asia and its enduring interest in preventing the use of nuclear weapons, concerns about Pakistani nuclear weapons remain substantial. In a 2011 review, the Obama administration concluded that the stability of Pakistan's nuclear stockpile is one of two long-term strategic objectives in South Asia, along with the defeat of al Qaeda.[6] The danger posed by Pakistan's growing nuclear arsenal, especially its short-range systems, is amplified by Pakistan's growing weaknesses in governance, persistent internal instability, and the potential for clashes with India.

During the Cold War, the United States and the Soviet Union defined land-based strategic nuclear delivery vehicles (SNDVs) as those with ranges greater

than 5,500 km. Nuclear warheads atop SNDVs could span oceans and threaten urban populations and targetable strategic forces. Weapons systems with much shorter ranges were defined variously as "battlefield," "nonstrategic," or "tactical" nuclear weapons. Both India and Pakistan reject this classification system for the subcontinent. Government officials in both countries have stated that the use of any nuclear weapon, regardless of the range of its delivery vehicle, will have strategic consequences.

This essay uses the term "tactical nuclear weapons" (TNW) to describe weapons systems, such as the Nasr, that are designed with a limited range and small explosive yield for use against an opponent's conventional forces. Their purpose is to deter an attack by a conventionally stronger force, or to destroy those forces should deterrence fail.[7] Shyam Saran, the head of the Indian National Security Advisory Board, observed that Pakistan's decision to develop TNWs "mimics the binary nuclear equation between the US and Soviet Union which prevailed during the Cold War."[8] Senior Pakistani military officers have privately acknowledged that they have examined the NATO experience as they continue their development of a national military strategy, doctrine, and associated force structure that includes tactical nuclear weapons.[9] Consequently, this analysis considers the historical experiences of the US and Soviet deployment of TNWs during the Cold War, and also builds on new analysis that marshals important insights from Cold-War-era military journals and other publications.

In addition, this essay focuses on the operational complexities and risks associated with deploying TNWs in proximity or as part of conventional-maneuver warfare. It examines how TNWs are likely to increase pressure to escalate during any future crisis. The essay also demonstrates that assumptions regarding the use of TNWs to compensate for perceived conventional shortcomings are misguided. Finally, a review of the American experience during the Cold War highlights the practical and operational challenges to implementing a strategy that relies on TNWs.

## Pakistan's Pursuit of Nuclear Weapons

Pakistan's desire to become a nuclear-armed state is rooted in a conviction to respond to strategic developments in India. The nuclear program evolved into "the most significant symbol of national determination and a central element of Pakistan's identity."[10] It is estimated that Islamabad maintains a stockpile in excess of 100 warheads.[11] For safety and security reasons, all of its weapons are believed to be stored in various locations throughout the country rather than

directly with delivery vehicles. In recent years, efforts to expand the nation's nuclear arsenal have included the construction of two additional plutonium-producing nuclear reactors at the Khushab nuclear complex to ensure an adequate supply of nuclear material for weapon production.[12] Pakistan already had two production facilities at this site that produced an estimated 22 kilograms of plutonium annually, which is roughly the amount required for up to four nuclear weapons.[13] Peter Lavoy, former US national intelligence officer for South Asia, observed in 2008 that "despite pending economic catastrophe, Pakistan is producing nuclear weapons at a faster rate than any other country in the world."[14]

Most observers trace Pakistan's decision to produce TNWs to developments following the 1999 Kargil War. Units of the Pakistani Army's Northern Light Infantry regiment achieved an element of surprise when its forces crossed the Kashmir divide into the Kargil-Dras sector. This provocative infiltration was detected by India in early May, and resulted in a limited war that only ended after intense pressure was placed on Pakistan by the United States to withdrawal its forces. In many ways this crisis was a watershed in Indo-Pakistani security relations because it demonstrated that even the presence of nuclear weapons on both sides did not dampen the possibility of conflicts.[15]

During the Kargil War, Indian military officials were frustrated by their inability to rapidly deploy large-scale conventional forces along their border in response to this incursion. Two years after Kargil, the Indian army was again embarrassed by the largely futile Operation Parakram in 2001-2002. The mobilization of massive Indian conventional forces along its western front in the aftermath of the terrorist attack against the Parliament in December 2001 took nearly a month. By then the United States had prevailed on the government in New Delhi to show restraint, and Pakistan had significantly improved its defenses.[16]

Its inability to mount a conventional military response against Pakistan in 1999 and 2001-2002 prompted the Indian army to consider a new strategy to improve its ability to deploy forces quickly and take advantage of its conventional advantages over Pakistan. In 2004, advocates within India made public references to a new military concept, which was labeled Cold Start or "proactive operations."[17] These advocates sought a reorganization of the Indian army into smaller integrated battle groups that would be prepared to launch rapid simultaneous conventional attacks against Pakistan along multiple avenues of advance. Following two major exercises (Vijayee Bhava and Sudarshan Shakti), then Indian Chief of Army Staff Gen. V. K. Singh argued in early 2012 that what had taken the Indian army 15 days to accomplish in 2001 could now be done in seven days. He further asserted that by 2014 the army's aim was to reduce that time

to three days.[18] Advocates of these shifts in Indian military posture argued that agile conventional campaigns could be fought under the nuclear threshold, even when operations were carried out 50 km to 80 km inside Pakistani territory.[19]

There is considerable skepticism in India about these plans. In the decade since it was proposed, Cold Start has faced serious conceptual, logistical, and political challenges.[20] India has not enacted necessary defense procurement reforms needed to equip Cold Start, and chronic inter-service rivalries within the military render joint operations aspirational at best. Most importantly, Cold Start does not appear to have the political support required for it ever to be authorized. The government of India did not respond militarily to the 2008 Mumbai attacks, and Singh claimed in 2010 that "there's no such thing as Cold Start."[21]

Despite the evident difficulties in implementing Cold Start, the prospect of a limited war combined with New Delhi's growing conventional force advantages, interest in developing ballistic missile defense capabilities, and potential to achieve air superiority create serious security dilemmas for Rawalpindi. Pakistan's military views Cold Start as a goal that New Delhi intends to achieve over the next several years and to which Rawalpindi must find and deploy a response. Pakistan's operational challenges during a crisis would be complicated by its need to reposition forces from its western frontier to counter an Indian attack. These forces would have to be transported by rail, a challenging prospect as their movement would be vulnerable to attack by increasingly capable Indian aircraft or special operations forces. Pakistan's security interests in Afghanistan and the security challenge posed by the Pakistani Taliban in the Federally Administered Tribal Areas and Waziristan, particularly after the departure of US forces from Afghanistan by 2016, will demand resources from the Pakistani military to be deployed in the western part of the country that would normally be positioned along the border with India. Rawalpindi's security concerns also extend to Balochistan, where India is allegedly fomenting unrest.

Pakistan's perceived need for TNWs is rooted in these challenges, which are all magnified by growing Indian conventional capabilities.[22] As one general explained to this author, "the wider the conventional asymmetry, the lower the nuclear threshold."[23] The perceived need for TNWs is rooted in a "deterrence gap" below the strategic threshold. Without TNWs, Pakistan faces the "grim option of either calling for a massive and suicidal nuclear attack against Indian cities in response to India's limited conventional aggression or surrendering."[24] TNWs therefore offer the prospect of "throwing cold water on Cold Start."[25] Stephen Cohen observed that Pakistani military exposure to "Western nuclear strategizing" has resulted in current nuclear planning and doctrine

that "very much resembles American thinking with its acceptance of first-use and the tactical use of nuclear weapons against onrushing conventional forces."[26] As was the case during the Cold War, the production of TNWs in Pakistan will likely precede the formulation of associated military doctrine and operational planning.

### *Downside Risks*

A relationship exists between the types of nuclear weapon delivery vehicles in a nation's arsenal and the impact they have on crisis stability and escalation control. If the nuclear forces of India and Pakistan are designed and postured for a reliable, second-strike capability, then the addition of new weapon systems or the replacement of older systems need not alter overall deterrence stability. The acquisition of TNWs, however, could increase the likelihood for rapid escalation during a crisis or war and disrupt deterrence stability.[27] Some Pakistani strategists have acknowledged that the introduction of TNWs into the ongoing competition with India "taxes the strategic stability and thereby could jeopardize deterrence stability."[28]

Deterrence is the power to prevent, discourage, or dissuade a potential adversary from taking a particular course of action. It can be summarized by the following equation:

$$\text{Deterrence} = \text{Capability} \times \text{Credibility}$$

The capability residing in nuclear weapons also requires command and control networks to convey nuclear orders, ensure security of the weapon systems prior to use, and run associated launchers, communications, intelligence gathering, and target analysis modeling. Missile testing and the public announcement of national security strategies, redlines, training exercises, and military doctrines are essential aspects of the "credibility" portion of this equation. Pakistan's decision to develop and produce TNWs could, therefore, represent a shift in deterrence thinking away from one focused on a doomsday or massive retaliation approach to a more nuanced targeting strategy and threat analysis. This could be construed as a shift from a deterrence strategy focused on "deterrence through punishment," which holds Indian cities hostage in time of crisis. It could also imply a strategy of "deterrence through denial," which might attempt to convey to Indian military leaders that a conventional attack would be futile. Pakistani spokespersons have begun using the formulation of "full spectrum deterrence" and "flexible deterrence options" to describe their nuclear

posture.[29] Some experts believe this now portends a shift from Pakistan's "minimum credible deterrence" to one that actually considers nuclear war-fighting.[30]

In formulating a deterrence strategy that includes the possible use of TNWs, Pakistan has determined that, given growing Indian advantage in conventional forces, Islamabad cannot commit itself to a no first use policy for nuclear weapons.[31] Instead, Pakistan has maintained doctrinal ambiguity to engender uncertainty in the minds of Indian decision-makers. General Khalid Kidwai, former director general of Pakistan's Strategic Plans Division, came the closest to articulating an official nuclear-use doctrine for Pakistan when, in an interview with Italian researchers in 2002, he outlined the following as nuclear redlines in a conflict with India:

- India attacks Pakistan and conquers a large part of its territory (space threshold).

- India destroys a large part of either Pakistan's land or air forces (military threshold).

- India proceeds to the economic strangulation of Pakistan (economic threshold).

- India pushes Pakistan in political destabilization or creates a large-scale internal subversion in Pakistan (domestic destabilization)."[32]

## Lessons from the Cold War

The development of TNWs by Pakistan to confront India's growing conventional superiority is similar, but not identical, to the challenge that confronted the United States during the Cold War. The US military sought to develop its own stockpile of TNWs as well as associated doctrines and operational plans to blunt a Soviet conventional offensive in Central Europe. Over time, many if not most American military planners realized the enormous operational and practical challenges associated with the effort to integrate nuclear fire-planning and operational maneuvers in an effort to enhance deterrence. Pakistani leaders and military planners might usefully consider these problems when contemplating the impact such weapons have on stability, particularly during a crisis.

While analogies are useful analytical tools, they are by definition imperfect, and it is important to point out the differences between the US-Soviet Cold War experiences as compared to the India-Pakistan context in the 21st century. First, India and Pakistan have no intervening terrain between them, whereas the United States and Soviet Union were planning the use of TNWs largely on

the territory of East and West Germany. Second, the United States ostensibly planned to consult with its NATO partners prior to initiating the use of such weapons, and actually deployed a significant number of TNWs to American "custodial detachments." These were relatively small units stationed with allied delivery units. Upon the receipt of duly authenticated nuclear command orders they would have transferred weapons to an allied delivery unit. By contrast, no such system of allied collaboration exists in South Asia. Third, the United States and the Soviet Union never fought a direct war with each other during the Cold War, though they were involved in several "proxy" conflicts. India and Pakistan have fought four wars since independence, one since acquiring nuclear weapons.

Fourth, the United States and the Soviet Union did not use extremist groups to conduct attacks on each other's soil. Pakistan has employed these tactics against India, and claims that India has used them as well. Some analysts have concluded that Pakistani military leaders rely on their nuclear deterrent as a cover for waging low-intensity warfare against New Delhi in Kashmir and elsewhere.[33] During the Cold War, leaders in the United States and Soviet Union fully understood that it would be folly to "contract out" the use of violence to extremist groups that might not be controllable. This has not been the case in Pakistan, where a dramatic attack on Indian soil by groups that have found safe haven in Pakistan might well result in an Indian conventional retaliation, which in turn could trigger a Pakistani decision to resort to nuclear weapons. In the South Asian context non-state actors have profound implications for managing deterrence.

Comparing and contrasting Cold War experience with South Asian dilemmas with regard to TNWs might be particularly useful in three areas: military doctrine, operational aspects, and peacetime stockpile safety/survivability.

## *Military Doctrine*

Doctrine refers to how armed forces are to fight tactically; how tactics and weapon systems are to be integrated; and how forces are to be trained, deployed, and employed in combat. Doctrine is not absolute or rigid, but must be continuously reevaluated in light of improvements in technology and changes in the threat environment. From a military standpoint, doctrine for the use of TNWs must be operationally credible so as to enhance deterrence. Consequently, it is logical to believe that any professional military force would proceed in an analytical fashion to integrate a new system (such as TNWs) into its overall operational planning. Such an analysis would seek to maximize the capability and credibility portions of the deterrent equation. In the case of American Cold War think-

ing, the employment of TNWs was to be considered when one or more of the following conditions existed: (1) reinforcements, combat support, and combat service support were not available to sustain the force, (2) survivability of the force was in question, including via nuclear weapons and delivery systems attrition, (3) there was evidence of an impending nuclear strike by the enemy, and (4) future operations required the additional combat power of nuclear weapons.[34]

Some experts argued that several if not all of these conditions would have existed at the very onset of any conflict between NATO and the Warsaw Pact. Likewise, Western military strategists were almost unanimous in their view that the use of TNWs, if necessary, would have had to occur prior to the point where NATO conventional forces had been excessively attrited.[35] Consequently, it was widely believed by US defense experts that NATO could not lose conventionally and expect to win with nuclear weapons.[36] This "use them or lose them" dilemma clearly placed increased pressure on escalation during the Cold War, and would also be the case in any crisis involving India and Pakistan.

The need to initiate battlefield nuclear use prior to the collapse of the defense is, therefore, important for two primary reasons. First, the defense must still be strong enough so that an attacker is forced to mass his forces in order to have any hope of breaching the defense — thus presenting large, profitable targets.[37] Second, the military significance of the use of nuclear weapons on the battlefield must be related to the defender's ability to then exploit their detonation to restore the situation to at least the status quo ante. In NATO's case, this meant, at a minimum, the restoration of the international border. Consequently, NATO's employment of TNWs was not intended to be simply a "signal flare" in the event that the conventional defense was totally lost. Instead, the use of TNWs was supposed to result in concrete and finite gains on the battlefield. Such an outcome was unlikely during the Cold War. If Pakistan's use of TNWs is not intended as a signal flare, and instead is designed to achieve military gains, this outcome is as unlikely in contemporary South Asia as it was during the Cold War.

In 1973 the US Army published a new policy for the limited use of nuclear weapons, which attempted to incorporate NATO's "flexible response" doctrine and the provisional guidelines for the employment of nuclear weapons on which the alliance had agreed. It distinguished five general categories for the constrained use of nuclear weapons by the US Army: (1) demonstration, (2) limited defensive use, (3) restricted battle area use, (4) extended battle area use, and (5) theater-wide use.[38] Planning for these contingencies was largely conducted at the Army's corps headquarters level.

In the event of a US-Soviet nuclear crisis, once a corps commander decided that his situation was rapidly deteriorating, and many (if not all) of the criteria previously outlined had either occurred or were about to occur, he was to initiate a request for the release of nuclear weapons. This request would be passed to the National Command Authority (NCA). The issuance of a request presented an enormous problem for the development of doctrine, since the timing of such a request was dependent on a commander's ability to foresee the future course of battle so that the request for release could be made far enough in advance of the actual necessity to employ nuclear weapons.

Models were created during the Cold War to illustrate the request-release sequence. These models consistently failed to provide a sound depiction of the required complex operation. Many experts believed this was due to a lack of understanding of how tactical nuclear war would actually progress.[39] Even the best operational modeling concepts did not allow for the introduction of developments that could possibly or likely occur. The process between the NCA and tactical echelons (even when political factors were ignored) was seldom modeled dynamically with respect to the ground battle. During Cold War exercises some prior release was normally assumed, so escalation was not included as part of decision-making as conventional war unfolded. Nontechnical effects of TNWs, especially regarding command, control, and communications, as well as tactical unit integrity, were also not depicted.[40] Furthermore, the effect of catastrophic damage to an intermediate headquarters on overall operational cohesiveness was rarely if ever examined.

Prior to their actual use, positive control of nuclear weapons — the assurance that nuclear weapons would be used when ordered by a designated officer or official — was maintained by a series of mechanical/electronic devices (referred to as permissive action links, or PALs) and established security procedures. Release, or the authority to use nuclear weapons, would be conveyed from the NCA for all weapons through the operational chain of command. This was accomplished by the use of the nuclear release authentication system. This system comprised an established set of guidelines for operations, and a means of authenticating messages by use of codebooks and/or sealed authenticators to alter a unit's nuclear-readiness posture. Trained operators were assigned at all intermediate levels to receive, act, and relay message traffic.[41]

Negative control—the assurance that weapons would not be used prior to release by the NCA—was also maintained by the use of the "two-man rule" and the presence of PALs on all tactical nuclear warheads. The two-man rule was a command directive that any time access to nuclear weapons or control orders

was authorized, at least two individuals properly cleared and trained in the task being performed needed to be present to ensure that no unauthorized act took place. PALs were mechanical or electromechanical devices which, when installed on the warhead, positively disabled the weapon by interrupting the assembly or firing sequence. A warhead equipped with PALs could only be used by enabling the device or by applying the correct combination to the lock and removing it from the warhead.[42] All of the steps in the command chain were deemed necessary to ensure adequate control and maintain the maximum possible degree of security against accidental or unauthorized use. This process could greatly slow down and complicate the effective employment of TNWs when deemed necessary.

During the Cold War, American doctrine for TNW release was designed to seek approval for the employment of a discrete number, or package, of weapons. The package was to be employed for a specified period of time, at particular geographic locations, in accordance with any other additional constraints established by the NCA in consultation with other alliance members. Additional constraints could include placing limits on the maximum yield that could be used or adjusting targets to avoid damaging population centers.[43] While little is known about Pakistan's operational planning, it would not be surprising if Pakistan followed similar procedures.

The package was the creation of the corps Fire Support Element (FSE). It included best efforts to plan for the use of weapons on certain targets that presented themselves (likely enemy locations) or avenues of approach. The FSE served as the focal point in performing the mission of fire-planning (or target selection) and the additional mission of weapons employment (or the calculation of which weapon to use on a selected target). Packages were designed to "contain enough weapons to achieve a desired objective," and the objective was to change the tactical situation decisively.[44] Such planning for TNW use had to include procedures to warn friendly units about impending nuclear employment and to make efforts to maintain accurate, up-to-date information on the civilian population so as to preclude collateral damage to populated areas to the maximum degree possible.

For these reasons, American military planners realized that nuclear-fire planning had to be integrated very closely with the conventional scheme of ground maneuver.[45] Five variables were critical in this effort. First, the maneuver commander had to ensure that the weapons to be employed were the right type, number, and size. They also had to have been transferred to the delivery units (missile or artillery batteries) that could execute the package after authority to employ them had

been granted. This would likely require repositioning nuclear weapons and associated launchers throughout the corps sector to ensure mission responsiveness once release was granted. Second, targets had to be prioritized. If additional restraints were placed on the total number of weapons that could be employed, the most important targets would be the ones that were struck first.[46] Third, fire-planning had to be sensitive to the survivability of the entire fire-support system (target acquisition, target employment, planning, coordination, and poststrike analysis).[47] Fourth, all efforts had to be made, as noted above, to preclude "excessive damage to population centers while employing the largest yields on probable enemy locations within the remaining areas."[48] Thus there was a need for continuously available information about the flow of refugees and the creation of evacuation centers. Fifth, the fire-planning process had to consider that release might not be granted in time to be consistent with other tactical plans, or could be denied entirely. Tactical operations could not be solely dependent on the availability of nuclear fire support,[49] and non-nuclear strike operations had to be planned. During repeated field training exercises throughout the Cold War, American military planners discovered significant problems with this doctrinal process that would have only been exacerbated by the chaos of combat.

Weapons employment pertains to the selection of the proper system for a prescribed target. The weapon selected has to accomplish the desired effect while limiting collateral damage and staying within prescribed constraints. If the use of TNWs is designed to achieve tactical advantages, the maneuver commander's guidance to his staff is vital. This guidance should include a statement of desired results from the employment and defeat criteria (that is, the specified damage desired for the target).[50] It should further include any subsequent use if the initial effort did not accomplish the desired result, as well as the level of risk authorized with respect to friendly units, collateral damage preclusion criteria, and guidance for intelligence collection/target acquisition.[51]

Cold War models for weapons employment named radiation as the primary producer of casualties from tactical weapons. Consequently, the defeat criteria, or the level of casualties and damage required, was established in terms of the amount of radiation derived from an attack, which also had to consider the target "posture" (e.g., target troops in the open or armored formations). US nuclear fire-planning for integrated combat sought to subject frontline enemy forces to 3,000 rads to 8,000 rads,[52] and enemy forces to the rear to 650 rads to 3,000 rads; and to avoid more than 100 rads to friendly forces.[53] It was believed that this was necessary either to blunt an enemy attack immediately and/or to pave the way for subsequent counteroffensive operations.

During the Cold War, military planners discovered that operational difficulties with the fire-support system and the calculation of appropriate-weapons yield served to decrease overall effectiveness. For example, since a Soviet/Warsaw Pact armored offensive was the most likely scenario, the tactical requirement to achieve immediate transient incapacitation of enemy personnel in tanks would necessitate a minimum of 3,000 rads over the radius of the target.[54] Any weapon's capability to expose an enemy armored force to this amount of radiation would be reduced as a result of the shielding provided by the tank.[55] Consequently, a larger-yield weapon would be required to achieve the same effects as opposed to an unprotected target (i.e., troops dispersed in the open).[56] Some American military experts argued that this made "small-yield" weapons ineffective, as most employment scenarios emphasized the use of TNWs to blunt Soviet armor advances. Furthermore, since the model encouraged the selection of higher-yield weapons, this naturally conflicted with the need to protect friendly troops and avoid unnecessary collateral damage that might obstruct a maneuver or a counterattack.

In 1982 the US Army announced a new war-fighting doctrine called AirLand Battle, which emphasized close coordination between ground and air forces. AirLand Battle acknowledged that any use of TNWs on the battlefield had to be done at an early phase in a conflict if it was to produce any tangible results. Available studies on the integration of nuclear weapons and AirLand Battle underscored the following principles for when TNWs might be used on the battlefield:

- To exploit an attack.
- As an economy force.
- To decisively alter combat ratios.
- To attain the commander's purpose or objective.
- In a timely manner — achieving surprise over the enemy.
- As a reserve.[57]

In applying these principles, one of the primary missions was "interdiction," or the destruction or disruption of enemy forces before they could formally be introduced into battle. AirLand doctrine assumed the Soviet use of echelon formations. However, many experts believed it was highly questionable that these targets could be acquired and the information processed promptly because of their range. For example, while the range of the US Lance missile was roughly 120 km (twice that of the Pakistani Nasr), it would only be able to strike targets up to 80 km into enemy territory as a result of the fact that launchers were normally planned to be positioned so that only two-thirds of their range was beyond the frontline of friendly troops (FLOT).

Pakistani military experts have also suggested that they would seek to employ the Nasr against Indian follow-on forces and logistics. Consequently, they would be confronted with the operational challenges that are inherent in employing such weapons in an interdiction role. If the Nasr were positioned 20 km (roughly one-third of its range) back from the FLOT, it would only be able to strike targets 40 km beyond frontline forces. If the decision were made to move the launcher closer to the FLOT to expand its range, then its survivability would be placed at greater risk. Furthermore, the closer to the FLOT a launcher were positioned, the higher the corresponding requirement to avoid terrain with friendly forces in determining where the launcher could and should be positioned. Moreover, positioning systems closer to the FLOT could increase security concerns as interaction between Pakistan's Strategic Forces Command and conventional units increased.

The US AirLand Battle doctrine further envisioned a use of TNWs against close-in targets.[58] Pakistani military planners might also be forced to consider this option in order to halt an Indian armored breakthrough. The use of TNWs in this manner would require immediate relay of targeting information from intelligence assets to the planning headquarters for target refinements, and then to the units that would actually employ the weapons. This would further assume that the decision to release nuclear weapons had already been made, in a fashion that allowed for maximum flexibility. Furthermore, TNWs would have to be properly distributed so that weapons of the right variety were positioned in appropriate locations. All of this would have to be accomplished in an area of use that would encompass the maximum number of constraints — protection of friendly troops, avoidance of obstacles that might preclude effective exploitation of the attack, preclusion of unnecessary collateral damage, and limited civilian casualties — during a period of maximum chaos and confusion.

Furthermore, the likely fire-planning models employed by Pakistan might not provide a full depiction of other results, or the so-called bonus effects resulting from the use of TNWs. These include the electromagnetic pulse (EMP) generated by any weapon that could damage friendly as well as enemy command and control. In addition, emphasis on radiation as the governing effect for damage calculation does not permit the model to predict with any accuracy the thermal effects (i.e., fires), low-level and residual radiation, casing radiation, or dazzle effects.[59] These weapon effects would be critical, especially if the weapons were employed prior to the commencement of counteroffensive action. Furthermore, bonus effects demand close coordination between the ground and air commanders to ensure that friendly aircraft as well as front-

line troops are not endangered by the blasts, radiation, EMP or dazzle-effect associated with TNW employment.

The Pakistan military is confronted with very similar doctrinal challenges as it seeks an arsenal of tactical nuclear arsenal for use beyond very limited demonstration effect. If, instead, Pakistan's military seeks TNWs for military effects and to better synergize the employment of such weapons with its conventional defense posture, Rawalpindi will face the same dilemmas as the US Army, which decided it would be better off without them. Pakistan's Inter-Services Public Relations announced a revised military doctrine in 2012, but this press release provides very little detail on military thinking about the integration of nuclear weapons with conventional defense. It does note that Pakistan's "nuclear capability is aimed at complementing comprehensive deterrence." It further argues that this effort must reinforce the "combat potential of conventional forces, dis-incentivizing aggressiveness, inflicting unacceptable losses on the aggressor in case of a misadventure, war termination and post-war bargaining."[60] It appears that the Strategic Plans Division's doctrinal development process is proceeding in a similar fashion to the US Cold War experience: one senior Pakistani general described their development of a doctrine for the use of nuclear weapons as well as the associated means to analyze targets as "a work in progress." He observed that the army had yet to consider how to conduct integrated military operations involving both conventional and tactical nuclear weapons.[61]

In summary, the doctrinal aspects of TNW use during the Cold War were plagued by a paradox that would also confront the Pakistani military today. US planning required the greatest degree of flexibility to belong to the corps commander because of the massive coordination effort necessary for effective use. But it also demanded maximum central control at the highest political level in order to control escalation and crisis management. This paradox results in three general problem areas that Pakistani military planners would have to resolve. First is the challenge of refining targets quickly, which would be extremely difficult, if not impossible. During the Cold War, an American expert argued that in fact the doctrine assumed two sine qua non conditions — the existence of a worthwhile target (i.e., a sufficiently large and concentrated formation to justify the use of a TNW); and a certain permanence of the target in order to permit its identification, its pinpointing, the transmitting of necessary data, and the final engagement."[62] Second, an implicit requirement existed to maintain three plans — one nuclear, one conventional, and one integrated — while the request-release process would be ongoing (making the prospects of success seem even more remote). Third, it demanded that all necessary coordination to

employ TNWs be done in a manner consistent with conventional fire-planning and tactical maneuvers. This paradox and the resulting problem areas were endemic during the Cold War, and would also be true for any future doctrinal concept Pakistan might apply to the use of TNWs.

Pakistan would be confronted not only with all of these problems, but also serious geographic challenges. The distance from Islamabad to the international border is less than 300 kilometers, and Lahore is 25 kilometers from the border between Pakistan and India. Consequently, Pakistani forces have little space to withdraw during the conventional phase of hostilities before deciding to escalate to the use of TNWs. This is further complicated by the relative short range of systems like the Nasr. As a result, it is very likely that any employment of TNWs by Pakistan would have to come either at the very onset of hostilities or would have a high probability of striking Pakistani territory. Pakistani military and political leaders will likely be faced with the classic dilemma of "using" its TNWs very early in order to stem an Indian conventional assault, or "losing" them as a result of their outright destruction or by detonating nuclear weapons on Pakistani soil.

## Operational Aspects

If doctrine explains how to do an activity, then operations are the actual implementation of that prescription.[63] Operational difficulties in implementing a doctrine of TNW employment are derivatives of the fire-support system (target acquisition, information processing, weapon availability, and employment) and command, control, and communications, which is the exercise of authority by a properly designated commander over forces assigned to accomplish a stated mission. According to C. M. Herzfeld in a study done for the International Institute for Strategic Studies during the Cold War, command and control functions are performed through an arrangement of personnel, equipment, communications facilities, and procedures which are employed by the commander in planning, direction, and controlling his forces.[64]

"Responsive" communications were deemed to be a critical factor in nuclear operation during the Cold War.[65] Serious communications delays in the passage of nuclear command and control orders were considered likely, however, since tactical headquarters involved in tactical nuclear employment might be attrited during the conventional phase of hostilities.[66]

Military experts have learned that the demands on the communications system always exceed its capability.[67] Henry Rowen concluded that this was a

natural result of the necessity for dispersal, concealment, and mobility in weapons systems, which increased the necessity for control but diminished its likelihood.[68] In sum, increased information flows and concentrated arrival points can increase delays. Any system for the use of TNWs demands a level of precision and timing that will almost certainly be seriously degraded by communications delays.

Ensuring timely and continuous communications on the nuclear battlefield was critically important to the United States during the Cold War. Special care was exercised during Cold War planning and exercises to ensure that friendly unit communications equipment was not degraded or destroyed by EMP effects. Disruption of communications systems as a result of friendly use of nuclear weapons was cause for great concern within NATO — and would be for Pakistan as well. This was especially true since most scenarios for the use of TNWs occurred at a time (such as prior to the commencement of a counterattack) when the demand for tactical communications would be the greatest. Consequently, a doctrine that depends on reliable communications for coordination of both fire support and maneuvers may be ineffective due to the effects of EMP.[69]

The necessity of adequate command and control for TNWs employment makes it a high priority for attack by either conventional means or by electronic warfare. The Soviet General Staff understood well that combating NATO's nuclear means of attack included the neutralization of command and control as well as the physical destruction of weapons and launchers before they could be used. They referred to this as "command and control disruption" (*narusheniye up-ravleniyal*).[70] The key task in this effort is to destroy or disrupt command and control in order to gain time and slow an opponent's decision-making cycle.[71]

During the Cold War, a large part of the command and control disruption mission was performed by electronic warfare, and Indian military plans would likely employ similar efforts. Electronic warfare consists of efforts to destroy or degrade an adversary's ability to communicate by denying use of the electro-magnetic spectrum; and acquisition of an enemy's location from the use of communication direction-finding equipment that could then be passed on to more conventional means to attack and destroy (e.g., ground troops, indirect fire assets, or aircraft). The Soviet Union expanded these capabilities dramatically throughout the Cold War,[72] with NATO nuclear-capable units its first priority. Soviet efforts to degrade NATO's command and control capability could have reduced "battlefield communications to that of 1916," according to one expert.[73] There can be little doubt that India would seek to degrade Pakistan's command

and control networks through the use of electronic warfare, perhaps even prior to the onset of hostilities. This could be further exacerbated by the advent of cyberweapons that could degrade Pakistani command and control networks. In addition, Soviet special operations forces were designed to operate behind NATO lines with the mission of locating and destroying command and control assets or nuclear-capable units.[74]

The Pakistani military will be confronted with similar operational issues as it seeks to prepare the necessary plans for implementation of tactical nuclear use. It must take into account that command and control systems will be subject to degradation due to EMP effects following any employment of nuclear weapons. In addition, Indian forces are likely to employ both electronic warfare and cyberattacks to undermine Pakistan's command and control networks. Finally, the actual tactical nuclear forces as well as command and control facilities should expect assaults by Indian special operations units during a crisis or the initial phase of hostilities between the two countries.

In 2006, Kidwai reportedly acknowledged that Pakistan employs at least "the functional equivalent" of the two-man rule when dealing with nuclear weapons. He had previously suggested in 2002 that Pakistan might use a "three-man rule," but this has never been confirmed.[75] If Pakistan does employ a three-man rule, it could include a launch team commander, a representative from the Strategic Plans Division, and a head technician.

It is also widely believed that Pakistan employs some combination of technical measures to deny access to unauthorized personnel. Pakistani officials, however, have largely been reluctant to discuss details regarding PALs for their weapons systems. Former Pakistani nuclear scientist Samar Mubarakmand stated in a 2004 television interview that every nuclear warhead was fitted with a "code-lock device," which requires a proper code to enable the weapon.[76] Still, it is unclear whether PAL devices, if employed by Pakistan, are merely locks or more sophisticated devices that two personnel must implement in concert with prescribed release procedures.

In summary, NATO's command and control network was highly vulnerable to disruption and attack, and would have been degraded during the conventional phase of any conflict, and weapons were stored in vulnerable fixed sites to prevent unauthorized access. All of these problems are a modern version of Clausewitz's "friction of war" — that is, even the easiest task becomes difficult in warfare. Although efforts to model the command and control sequencing were always deemed to be incomplete, most experts were in agreement that 24 hours

from request to release was grossly optimistic. The Pakistani military and the NCA would be confronted with all of these problems in times of crisis or war.

## Peacetime Stockpile Security

In addition to the disruption of NATO command and control and the destruction of nuclear-capable units during combat, Soviet or East German special operations attacks against NATO nuclear storage sites were considered very likely during periods of crisis. During one mock exercise, five- to eight-member American Special Forces teams (simluating Soviet "*spetsnaz*" forces or terrorist groups) stormed the fences of several sites, overwhelmed the guards, and claimed possession of the nuclear warheads in less than 30 minutes.[77] A 1978 CIA report identified these nuclear storage depots as "the most vulnerable and, therefore, most likely targets for future terrorist activity."[78] There were numerous actual terrorist threats against such sites during the Cold War.[79] For example, in January 1977 the Red Army Faction conducted an attack against a NATO nuclear storage site in Giessen, Germany. The group's leadership later described their desire to destroy or capture a nuclear weapon, but the attack failed when the group's plans went awry.[80]

Securing TNWs and their delivery vehicles pose greater problems than strategic weapons systems because of their relatively small size and portability. Furthermore, an inherent contradiction exists between the requirement for ensuring warhead security in peacetime and survivability in a crisis, and providing operational availability in wartime. This posed a monumental dilemma to NATO force planners. Efforts to upgrade site security that are largely directed against a peacetime terrorist threat hinder the rapid evacuation of sites during a crisis or war. As the NATO tactical nuclear stockpile grew, there was a corresponding need for more storage sites to disperse the weapons in order to preclude them from being destroyed in the initial Soviet onslaught.

Finally, the decision to evacuate nuclear weapons from their peacetime storage locations could be delayed during a crisis as a result of concerns that such a decision would be viewed as escalatory. American military experts during the Cold War believed that an order to disperse NATO's tactical nuclear forces during a crisis to ensure their survivability would have been regarded by the Soviet Union as a highly escalatory step, which, given the vulnerability of NATO's peacetime posture, would have likely prompted Soviet preemption.[81] As Jeffrey Record has written in *NATO's Theater Nuclear Force Modernization Program: The Real Issues*, a decision to disperse NATO nuclear forces in time of crisis could have triggered a "Sarajevo moment." It would "be tantamount to an act of war similar in consequence to army mobilization orders that rippled through Europe in the summer of 1914."[82]

Pakistan faces many of the same challenges when it comes to pre-delegation and nuclear security, especially if Indian military and political leaders believe that authority to employ nuclear weapons would likely be pre-delegated to Pakistani military commanders during a crisis or war. In addition, Indian special operations forces and indigenous groups disaffected from the Pakistani government or interested in sparking a war could pose clear threats to Pakistan's control over its most portable nuclear assets. The South Asia Intelligence Review has estimated on its terrorism portal that there are 46 domestic and transnational terrorist organizations based or operating in Pakistan.[83]

Pakistani leaders have steadfastly argued that no plans exist for the pre-delegation of authority to use nuclear weapons to local military commanders.[84] Despite these assurances, Indian military and political leaders might assume that release authority had been provided to the delivery unit commander once the weapons were removed from storage and transferred to using units during a crisis or war. Furthermore, it seems reasonable to assume that Indian forces would seek to target Pakistani command and control nodes at the onset of any conflict. Furthermore, there is some uncertainty as to whether Pakistan would employ sophisticated PAL devices and how the "two-man rule" would be operationalized. If sophisticated PAL devices were employed, they would technically prevent the use of weapons absent nuclear control orders being transmitted from higher authority. But if access were only barred by procedural restrictions such as the two-man rule, then it would appear likely that a local commander would be provided pre-delegated authority and could decide to employ TNWs.[85]

Published reports of uncertain accuracy estimate that Pakistan maintains 15 or more sites around the country where nuclear weapons are stored. Some may be dummy nuclear storage sites to confuse a potential adversary.[86] Whatever the number of storage sites, they are heavily guarded, and Pakistan appears to depend on absolute secrecy as one of its primary means to protect these weapons. Pakistani officials have repeatedly offered assurances that their nuclear weapons are absolutely secure, safe, and virtually immune to any risk of unauthorized or inadvertent use.[87] Nonetheless, there have been a number of attacks by extremist groups against heavily guarded military sites, including some that have taken many hours to quell. A Pakistani air base at Kamra was attacked in 2007, 2009, and in August 2012, when eight Taliban stormed the facility with rocket propelled grenades (RPGs) and automatic weapons.[88] A subsequent threat at Dera Ghazi Khan in September 2012 resulted in the deployment of three divisions in southern Punjab to deter the attack and crack down on banned militant groups.[89]

Consequently, Pakistan faces significant challenges with respect to the safety and security of its TNWs in peacetime — let alone in crisis or wartime. Efforts to safeguard weapons from any and all threats will further complicate the critical transition from crisis to war. During a crisis, pressure would increase to move nuclear weapons from fixed storage sites to field storage or delivery units to ensure their survivability. This transition would also raise serious questions about the pre-delegation of authority to employ such weapons, which would place additional challenges on escalation control.

## Conclusion

This essay has analyzed operational issues relating to TNWs during the Cold War, and applied these insights to contemporary South Asia. If US and Soviet Cold War experience is any indication, Pakistani military planners and frontline soldiers will find battlefield nuclear weapons to be a logistical nightmare. Indeed, the unanticipated challenges that arise with the forward deployment and use of TNWs — incorporating nuclear fire-planning with conventional maneuver operations, maintaining a clear chain of command in crisis scenarios where nuclear weapons are being used, and hardening communications against EMP blasts, among other dilemmas — offset the deterrent value these systems are purported to provide. Pakistani military authorities appear inclined to make many of the same miscalculations as US and Soviet ground forces did during the Cold War.

There is a widespread assumption in Pakistan that the development and deployment of TNWs is a cost-effective way to make up for its growing conventional inferiority to India. Those who have studied Cold War nuclear doctrine for TNWs would disagree. Alain Enthoven and Wayne Smith observed in their celebrated 1971 book, *How Much Is Enough?,* that TNWs were not a replacement for conventional forces, and would not have guaranteed success against a massed Soviet attack.[90] Enthoven, who served as US assistant secretary of defense for systems analysis, once wrote that "TNWs cannot defend Western Europe; they can only destroy it. ... There is no such thing as tactical nuclear war in the sense of sustained, purposive military operations."[91]

The nuclear-capable short-range Nasr raises all of the dilemmas discussed above. An even more destabilizing approach would be for Pakistan to develop artillery-fired atomic projectiles (AFAPs) for its force of 155 mm and 203 mm howitzers, or to consider the development of such things as atomic demolition munitions. The United States employed some of these platforms for the potential delivery of AFAPs, as did the Soviet Union for its 152 mm and 203 mm howitzers. This would appear to be technologically feasible if Pakistan could miniaturize

the nuclear components for AFAPs.[92] Cost consequences would be reduced as platforms already exist, and there are well-trained crews for the operation of the howitzers. AFAPs would provide lower-yield weapons unless Pakistani scientists are able to master enhanced radiation warheads, as the United States attempted to produce and deploy to Europe in the 1980s. Such weapons would be delivered by dual-capable (conventional and nuclear) units, which would enhance their survivability. They would, however, have substantially shorter ranges (probably less than 30 km), and this would limit their effectiveness to interdict follow-on Indian conventional forces.

Pakistani leaders appear to believe that the "signals" conveyed by their actions during a confrontation with India with respect to their tactical nuclear forces (i.e., movement of the stockpile from storage and movement of delivery vehicles in the field) would be interpreted clearly by Washington and New Delhi, and that risks for escalation would be manageable. It would be wise for Pakistani leaders to carefully consider how any actions in a crisis would influence the leadership in New Delhi, what assumptions they might make, and whether New Delhi would read these messages as intended — that is, as signaling deterrence rather than war preparations.

Pakistani military leaders might assume that India will not seek to blunt the deterrence value of developing and advertising TNW capabilities by responding in kind. So far, New Delhi has not expressed interest in developing such weapons, as Indian force developers are focused on improved conventional capabilities, a sea-based deterrent, and a family of cruise missiles. India could employ longer-range systems against targets near the FLOT, use conventional air power, or employ short-range missiles such as the 60-km-range Prahaar. While Indian defense scientists have publicly noted that the Prahaar could carry "different types of warheads,"[93] Pakistani officials claim the Nasr is a response to the Prahaar. Currently, there is no clear evidence that New Delhi is interested in developing TNWs.

The belief held by some Pakistani military leaders that the development, production, and induction of TNWs would cancel out Indian conventional advantages while facilitating "subconventional" warfare is both dangerous and problematic. It assumes that, even after the Mumbai attacks, Indian leaders would continue to show restraint in the event of a large-scale terrorist attack in Indian territory. This may turn out to be true, but it seems less likely following the election of Prime Minister Narendra Modi, who has called for a more muscular approach to India's national security policies. With reference to the 2008 Mumbai attacks, he pointedly criticized the previous government led by Manmohan Singh by observing that "Indians died and they did nothing. … Talk to Pakistan in Pakistan's language because it won't learn lessons until then."[94]

The development and production of TNWs is not simply a continuation of existing nuclear trends in Pakistan. Instead, TNWs pose new and more severe dilemmas. The presence of TNWs will naturally result in increased pressure on both India and Pakistan to escalate during any future crisis. Pakistan and India would do well to consider measures to reduce nuclear risks and create channels for crisis management.

Pakistan might also reconsider the practical and operational risks and challenges regarding TNWs, particularly the difference in risk profiles between a small number of systems and widespread numbers readied for deployment. Perhaps the most important takeaway from a historical analysis of the Cold War is that the challenges faced by US and Soviet planners and frontline operators grew exponentially, rather than linearly, as TNWs were deployed at scale. Communication, coordination, planning, and incorporation into conventional units became manifestly more difficult as arsenals of TNWs grew. This unsettling conclusion might give pause to Pakistani military planners as they consider what portion of their ever-increasing stockpile of fissile material they can afford to dedicate to a class of nuclear weapons that may present more problems than solutions.

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# DEPENDENT TRAJECTORIES: INDIA'S MIRV PROGRAM AND DETERRENCE STABILITY IN SOUTH ASIA

*Joshua T. White and Kyle Deming*

India has long emphasized minimalism as the guiding principle of its nuclear doctrine.[1] Leaders in New Delhi have largely foreclosed a policy of first use and, viewing nuclear weapons as instruments of existential deterrence rather than war-fighting, have been slow to modernize delivery systems. Wary of military influence over the nuclear enterprise, India's civilian elite have established strict and elaborate controls over nuclear decision-making. Since the nuclear tests of 1998, these same elite have maintained that, in accordance with the principle of minimalism, India seeks an arsenal consistent only with the lowest quantitative and qualitative levels required to sustain a credible deterrent effect against the dual threats of China and Pakistan.[2]

There are reasons to believe that this long-standing consensus on nuclear minimalism may be fraying. As documented elsewhere in this volume, some Indian observers are increasingly concerned that their country's nuclear doctrine is not keeping pace with technological developments by potential adversaries. Minimalist deterrence models, such as those predicated on the assurance of massive retaliation to any nuclear strike on Indian forces, are being seen in some quarters as outmoded and lacking credibility in light of Pakistan's potential deployment of short range nuclear-capable delivery systems.[3] Some strategists even worry that the no first use (NFU) pledge has inadvertently reassured Pakistan and incentivized its use of subconventional militancy against India.[4]

Quite apart from these doctrinal debates, challenges to nuclear minimalism are also emerging from India's technical community. Developments spearheaded by India's powerful defense research organizations are gradually influencing the shape of India's nuclear posture — creating capabilities that could over time precipitate changes in strategy and doctrine. Even the open pursuit of technologies that stand little chance of becoming fully operational could have significant consequences for the way in which India's own strategic enclave formulates its options, and for the technology and nuclear policy decision-making of India's neighbors.[5]

Two technologies under development by India today could presage a move away from a restrained nuclear posture. The first is ballistic missile defense (BMD),

a capability that the defense research establishment is publicly pursuing but which the defense policy community and political leadership have not yet fully endorsed. Few observers expect Indian BMD capabilities to develop quickly, as even the world's leading defense industrial bases, such as the United States, have found the implementation of such systems to be fraught with technological challenges. Nevertheless, even the specter of a limited BMD shield over New Delhi could well spur a more intense, interactive nuclear competition with both Pakistan and China.

Another technology that could place equally consequential pressures on both Indian doctrine and Pakistani nuclear posture has received considerably less attention: the development by India's defense research base of multiple independently targetable re-entry vehicle (MIRV) capabilities for its medium- and long-range nuclear-capable ballistic missiles. The deployment of MIRVed ballistic missiles would be discordant with a policy of nuclear minimalism, and could signal a gradual erosion of India's commitment to NFU. Moreover, while India might justify development of MIRVs as a response to its perceived strategic vulnerabilities with respect to China, the one likely consequence of this development would be an acceleration of the arms race between India and Pakistan.

This essay examines the implications of Indian MIRV development for deterrence stability in South Asia. It begins with a critical review of the state of India's MIRV program. The section that follows explores the possible drivers of MIRV development, including domestic and bureaucratic incentives, strategic concerns related to Pakistan, and — most notably — perceptions regarding China's ballistic missile program. It then identifies three areas in which Indian MIRVs might, in addressing perceived deterrence gaps vis-à-vis China, inadvertently accelerate the arms competition with Pakistan. The essay concludes by critically examining New Delhi's options with respect to the future of its MIRV program — including those that might dampen destabilizing outcomes — and by arguing that MIRV development raises the stakes for its decision-making and messaging about its BMD ambitions. Given the particularly potent signaling risks associated with simultaneous development of MIRVs and BMD, the Indian political leadership would do well to consider the strategic advantages of articulating — at most — a carefully bounded BMD agenda limited to point-intercept capabilities protecting national command authority.

## From Smoke to Fire?

MIRVs are a ballistic-missile-payload delivery capability that allows a single missile to carry multiple warheads, each capable of being independently maneuvered into a separate trajectory by a payload "bus" toward distinct targets. When a MIRV capability is combined with advanced guidance systems, a single missile can be employed to destroy multiple hardened targets, thereby efficiently bolstering counterforce capabilities. MIRVs are a technological follow-on to multiple re-entry vehicles (MRVs), which disperse from a missile bus toward the same target but lack the independent maneuverability of MIRVs.[6] Unlike MRVs, which are suitable for "soft" targets such as cities, MIRVs can be used against dispersed or hardened military targets for which precision is necessary.[7]

MIRVs were first developed in the 1960s by the United States to compensate for the Soviet Union's advantages in missile throw-weight and as an offensive countermeasure to the anticipated development of Soviet anti-ballistic missile (ABM) systems. MIRVs also allowed warhead totals to rise appreciably without expanding the force structure. The MIRV program inspired fierce political debates in Washington, and featured prominently in the first Strategic Arms Limitation Talks (SALT). SALT I failed to limit the development, flight-testing, and deployment of MIRVs, which were eventually operationalized on ballistic missiles by the United States, Soviet Union, France, and the United Kingdom. Although the United States de-MIRVed its last land-based ballistic missiles in early 2014, Russia is moving forward with new land-based MIRVed ballistic missiles.[8] China and India have both begun to experiment with the technology. While Chinese officials have been reticent to discuss MIRV programs, Indian defense research officials have publicly advocated MIRVing their longer-range Agni-series nuclear-capable ballistic missiles. Relatively few details about India's efforts to develop MIRVs have been explicitly confirmed or independently verified; however, a survey of public statements by officials of the Defence Research and Development Organisation (DRDO) indicates that MIRVs represent a meaningful research focus for the Indian defense science community. Indian civil servants, cabinet ministers, and the Prime Minister's Office have yet to officially endorse these steps.[9]

Clear evidence of the defense science community's ambitions was voiced in September 2007, when the DRDO announced that the Agni-V — an intermediate-range ballistic missile (IRBM) capable of ranging Beijing and Shanghai[10] — would be a priority initiative for the DRDO and its Hyderabad-based missile facility, the Advanced Systems Laboratory (ASL).[11] Avinash Chander, then di-

rector of the laboratory, claimed at the time that the next Agni variant "would be a multiple warhead missile with a capacity to carry four to 12 warheads."[12] A few months later V. K. Saraswat, the DRDO's then chief controller of missiles and strategic systems, confirmed that the agency was working on MIRVs as part of a broader warhead modernization effort, either for the Agni-III or a future variant of the Agni series. He also provided an early rationale for the organization's MIRV development: "Adversaries will … acquire [missile defenses], so our future missiles should counter the threat of interception."[13] In October 2009, Chander added that India had "made progress on the MIRVs in the last two years," which, if true, places the earliest efforts by India around the time of the original Agni-V announcement in 2007.[14]

Between late 2009 and the period surrounding the first Agni-V flight test in April 2012, indications of India's progress on MIRVs remained limited. A DRDO newsletter in November 2011 — later recalled and modified — noted that Chander was leading a research group for a "6,000 km [range] A6 [Agni-VI] system with multiple warheads (MIRV) capable of launching both from the ground and underwater."[15] Even optimistic reports that took the DRDO at its word about achieving "significant progress" estimated that deployments of MIRVs were at least three to four years away.[16]

Following the first successful flight-test of the Agni-V in April 2012, an eager cadre of DRDO officials began speaking out more openly about the MIRV program. Saraswat, then the director-general of the agency, offered a new justification for the technology with no obvious connection to countering potential BMD: "Where I was using four missiles, I may use only one missile. So it becomes a force multiplier given the damage potential."[17] New insights also emerged about the technical direction of the program. An anonymous source in the DRDO suggested that work was also underway on a MIRV-capable Agni-VI — a new, heavier missile designed for intercontinental range — which could carry up to 10 warheads.[18] An August 2013 statement by the DRDO optimistically forecast MIRV deployments by 2015, with more advanced penetration aids and "intelligent warheads" following in due course.[19] These timetables were unrealistic. As of May 2014, *IHS Jane's* estimates that the MIRV-capable Agni-VI is still at the design stage and will not be fully operational until at least 2018.[20]

The DRDO has been somewhat more circumspect about MIRVing sea-launched ballistic missiles (SLBMs). Given the state of India's SLBM testing (described in more detail below), it is apparent that MIRVed SLBMs are not a near-term prospect. India's first-generation SLBM, the short-range K-15, has not yet been integrated onto the Arihant-class nuclear-powered ballistic-missile submarine.

The next-generation SLBM, the intermediate-range K-4, is still in early testing. Former DRDO director Saraswat gave a detailed presentation at the Indian Institute of Technology (IIT) Bombay in March 2013 in which he described a third-generation SLBM under development (no identifier was given, but some have dubbed it the K-5/K-6 or a modified version of the Agni-VI) that would have a range of more than 6,000 km and would carry four MIRVs with a total throw-weight of 2,000 kg.[21] While he did not venture a timetable for this system, it is presumably many years into the future.[22]

There are some reasons for skepticism about the DRDO's claims and timetables. For one, although development is clearly ongoing, there has been no clearly articulated public commitment from the Indian leadership in support of testing or deploying a MIRV capability. Public statements have largely come from the DRDO, reinforced by hawkish commentators and retired military officers.[23] The DRDO has earned a reputation for making overly optimistic statements and then failing to deliver capable systems in a timely fashion.[24] For example, in 2011 Saraswat assessed India's fledgling BMD system as on par with US and Russian interception capabilities, despite glaring shortfalls across a range of technical capabilities.[25]

The DRDO also faces real but presumably surmountable technical challenges. Miniaturizing warheads for MIRVed Agni-V/VI missiles and certifying the design yield of these warheads without breaking its self-imposed moratorium on hot testing will be difficult. Retrofitting the current short- and medium-range ballistic missile fleet for MIRV capability would represent an even greater obstacle, given the smaller diameter and throw-weight of the missiles.[26] (The Agni-VI is expected to have a diameter of approximately 2 meters, compared with approximately 1 meter for the earlier generation of Agni missiles.[27])

These political and technical restraints notwithstanding, there is ample reason to believe that the Indian MIRV development will move forward, albeit at an uncertain pace. The DRDO enjoys relative autonomy, and political leaders have been reluctant to impose restrictions on research and development programs or to muzzle DRDO officials who make extravagant claims. Work on controversial technologies such as BMD continues apace, and DRDO budgets are increasing.[28]

MIRVs also have a constituency within the close-knit community of scholars and defense analysts. Experts from Vivekananda International Foundation, a New Delhi think tank that has served as a feeder for national security positions under Prime Minister Narendra Modi's government, have written on more than one occasion about the benefits of an Indian MIRV program.[29] Former

Commander-in-Chief of Strategic Forces Command Lt. Gen. B. S. Nagal, who later served as head of the nuclear cell in the Prime Minister's Office, penned an illuminating article shortly after his retirement that suggests similar views may be held among senior uniformed officers. Nagal wrote that MIRVs should be pursued, as they can "increase the number of targets destroyed by one delivery vehicle, overcome missile interception defenses, [and] deliver more on a single missile, thereby reducing the delivery vehicles."[30]

Neither are the technical challenges associated with MIRVed missiles likely to be insurmountable. India is able to draw on a wealth of experience in propulsion technologies from its primary space agency, the Indian Space Research Organization (ISRO).[31] The organization's successful 2007 Space Recovery Experiment (SRE) provides some evidence that India has achieved progress on re-entry vehicle development, a key precursor technology to MIRVs.[32] The primary impediment to deployment is therefore likely to come in miniaturizing warheads with sufficiently high yields rather than mastering the MIRV bus technology itself. Absent political intervention from New Delhi, the defense research establishment seems on track to eventually flight-test MIRV-related technologies for the next generation of its ballistic missile delivery vehicles.

## Driving Development

What explains India's push for MIRVs? Outside of the DRDO, Indian officials have not been very forthcoming about the rationale for the program. It is, however, possible to speculate about the internal and external drivers of MIRV development. At some level, advocates of the technology within India are likely responding to reputational incentives. India aspires to great-power status; great powers have, or are developing, MIRVs; therefore, the narrative goes, India ought to do the same.[33] A corollary to this view emphasizes the need for notional nuclear parity with China. The argument here is that India ought as a matter of strategy to achieve some measure of nuclear parity with its peer competitor, and that the total number of warheads available and better means to deploy them are a reasonable metric for such parity. In practice, India's leaders may be less concerned with parity of the overall arsenals (a measure in which they currently lag) than with rough parity in targeting major population centers.[34] Even if one sets aside numerical notions of parity altogether and focuses on qualitative aspects, MIRVed ballistic missiles may — by boosting the efficiency of warhead delivery — be seen as both a prestigious and cost-effective addition to India's arsenal, as well as a counter to the combined increase in Chinese and Pakistani nuclear capabilities.[35]

More sophisticated versions of these arguments explicitly reference India's perceived threat from China. Since the People's Liberation Army began modernizing in the late 1970s, New Delhi has watched Beijing with concern. As India's deterrent has developed, it has sought as a baseline requirement the capability to place cities such as Beijing and Shanghai at risk as a way to deter Chinese escalation in the event of full-scale conflict.[36] The Agni-V missile, with a reported range of 5,000 km, was developed with this all-but-explicit purpose.[37]

China is already developing MIRV-related technologies for its ballistic missile program. The US Department of Defense has long assessed that China has the capability to develop MIRVs for its silo-based forces if it sought to do so.[38] Reliable reports suggest that the current generation of Chinese road-mobile ICBM, the DF-31A, may be MIRV-capable with a three- to five-warhead capacity.[39] In addition, a 2014 Department of Defense report to Congress assessed that China's next-generation ICBM, the DF-41, would be MIRVed.[40] In August 2014, provincial government sources appeared to inadvertently confirm the existence of DF-41 missiles in Shaanxi province.[41] In December 2014, reports followed that China had conducted a flight-test of a MIRVed DF-41 with an unknown number of dummy maneuvering warheads.[42] While China's development of long-range MIRVed ballistic missiles is most likely driven by concerns related to the US BMD deployments in Asia[43] and, as some have concluded, longer-term aspirations for nuclear parity with the United States,[44] India no doubt is watching this capability closely, and is seeking to be in a position to respond to Chinese flight-testing and deployment of MIRV capabilities.

More specifically, the DRDO and other MIRV advocates may believe that the technology can provide three advantages in India's competition with China. The first is in preventing a widening imbalance in land-based ballistic missile forces. India is believed to have at present only a limited number of missiles capable of targeting Chinese cities.[45] One source estimates that India has a small number of Agni-II IRBMs in service — about 20 to 30, which are presumed to be rail-mobile and able to range some, but not all, of China.[46] The longer-range Agni III IRBM may, according to analysts, have entered service in limited numbers.[47] And following a test in late 2014 of the Agni-IV, believed to be a longer-range ICBM variant of the Agni-II, the DRDO claimed that the missile was ready to enter production.[48]

China's land-based ballistic missile forces are, by contrast, both more diversified in terms of range and more numerous. Published Pentagon estimates put China's ICBM fleet at 50 to 75 missiles in 2013.[49] A Pentagon assessment of China's medium-range ballistic missile (MRBM) fleet in 2011 estimated the arsenal at 75 to 100 missiles.[50] Most of these are assumed to be the solid-fueled

and mobile DF-21 missiles, which likely form the backbone of China's deterrent against India. While China could fire its MRBMs in any direction, some Indian analysts are concerned that the DF-21 brigades in Yunnan and Xinjiang provinces are focused largely on India.[51]

With a smaller and perhaps less mobile arsenal, Indian strategic analysts worry that Chinese MIRV deployment would act as a force multiplier, allowing Beijing to efficiently increase the number of warheads delivered against Indian targets. Indian nongovernment experts have also assessed that China holds an advantage in terms of the accuracy of its ballistic missiles (particularly long-range missiles), which could allow them to achieve a comparable effect with relatively smaller yields.[52] Together, these concerns may provide incentive for India to continue MIRV development.

The second area in which the DRDO may believe that MIRVs provide important capabilities vis-à-vis China is in ensuring that India does not fall too far behind in its ability to establish a credible sea-based nuclear deterrent. China has a more advanced program than India does for nuclear-powered ballistic missile submarines (SSBNs). The Department of Defense assessed in 2014 that China has three Jin-class (Type 094) SSBNs currently operational, "and up to five may enter service before China proceeds to its next generation SSBN (Type 096) over the next decade."[53] Carrying up to 12 JL-2 submarine-launched ballistic missiles (SLBMs) with an estimated range of over 7,000 km, the Jin-class submarines are on the verge of providing China "its first credible sea-based nuclear deterrent."[54] Several Chinese sources have claimed that the JL-2 can carry between three and nine warheads, though this is unconfirmed.[55]

India, by contrast, lags in both SSBN and SLBM development.[56] Its first SSBN, the INS Arihant (known as the S-2 before its commissioning), began sea trials in early 2015, with initial operational capability anticipated in late 2016.[57] Plans are underway to build at least two more Arihant-class boats (the S-3 and S-4), but as India's submarine programs have been characterized by lengthy delays, the timetable for bringing these submarines to operational capability is unclear.[58] India's only operational SLBM is the K-15, which reportedly has a range of only 700 km and carries one warhead; it has undergone testing and will eventually be available for integration with the Arihant-class SSBNs. Reports suggest that the Arihant is designed to accommodate a dozen K-15 SLBMs.[59] As of early 2015, very early tests are underway for the K-4 SLBM, which is designed for a range of approximately 3,500 km.[60] Owing to the larger diameter of the K-4, the Arihant-class submarines would be able to accommodate only four of the missiles.[61] Some commentators have speculated that the follow-on SSBN class, beginning

with the S-5, would be designed with 16 or more missile tubes, though no credible design information on this class has yet been published.[62]

Even optimistic projections about India's ability to complete two or more Arihant-class submarines and bring the K-4 to initial operational capability over the coming years would leave India well below Chinese SSBN and SLBM capabilities. As one analyst suggested, it may take 20 years before India can "boast of any meaningful undersea deterrent force."[63] This structural disadvantage may itself provide a rationale for Indian planners to continue with MIRV development for the K-series missiles (e.g., the MIRVed 4-warhead SLBM described by Saraswat in 2013), so as not to be caught in a position in which China can MIRV its J-2 SLBMs and dramatically improve the throw-weight of its sea-based nuclear deterrent relative to India.

Finally, some in New Delhi may also believe that MIRVs provide a hedge against the possibility that Beijing may someday decide to deploy BMD.[64] (The prospect of a Soviet missile defense program and the need for "enhanced penetrability" were early motivating arguments for American MIRV development.[65]) China has undoubtedly shown interest in BMD, and could deploy limited defenses around some major cities. Indian officials and strategic analysts would have good reasons to expect the maturation of Chinese space and ballistic missile programs.[66]

That said, BMD efforts against long-range missiles have a checkered history, and it is unclear whether the technology will ever prove viable against sophisticated capabilities that include countermeasures, decoys, and other relatively simple penetration aids.[67] Indeed, India's DRDO already claims to have an active program focused on developing decoys for its ballistic missile fleet.[68] In sum, while there are no reliable indications that China plans to move away from its "restrained" nuclear posture, or that Chinese interest in BMD is oriented toward any potential threat other than the United States, Indian officials may believe that MIRVs are a necessary hedge against future Chinese capabilities, and a valuable boon to their force's deterrent value.[69]

## Downside Risks

China's reported flight-testing of a MIRVed DF-41 in December 2014 makes it quite likely that India will eventually follow with its own flight-test of a MIRVed ballistic missile. Apart from the reputational pressures to test, as described above, the Indian defense establishment will likely continue to justify the MIRV program on the basis of a competitive assessment of India's capabilities vis-à-vis China, and the need for cost-effectively bolstering its deterrent capabilities.

At the same time, there are good reasons to be concerned about the implications of India's MIRV development on parallel nuclear competitions in the region. These competitions are asymmetric: China hedges against perceived threats from the United States, India hedges against perceived threats from China, and Pakistan hedges against perceived threats from India.[70] India thus finds itself in a position in which it could lose whatever gains it might realize from MIRVs in terms of establishing greater deterrence against China, by inadvertently accelerating parallel arms competitions with both Pakistan and China. In this context, Indian political leaders in particular would do well to consider three downside risks if they move forward with MIRV development, flight-testing, and eventual deployment.

### Encouraging Technological Path Dependence

The first risk derives less from MIRVs themselves than from the precedent that is being set by allowing the Indian defense technical community to make decisions that de facto impact not only force posture but also nuclear signaling and doctrine. To be fair, this problem is not limited to one technology, and is not limited to India. The MIRV development process in India, however, has been emblematic of a wider dysfunction in the Indian defense system. Unless the Indian political leadership decides to provide more explicit guidance on the role and rationale for MIRVs in Indian strategic doctrine, they risk reinforcing the influence of the technical community in autonomously making technology decisions that have strategic import.[71]

For example, ample evidence documents the ways in which the American MIRV program was driven in large part by the technical community, and only later justified by policymakers.[72] Despite the distinct differences between the Cold War and the triangular strategic dynamic in contemporary South Asia, there are useful analogues here. Retrospective accounts of the US program highlight the dangers of technological path dependence.[73] In his classic 1975 analysis of the American MIRV development, Ted Greenwood observed that "political and bureaucratic forces," particularly those in the defense research community, kept the MIRV program alive even as the strategic rationales for such a capability changed or were obviated over time.[74] Others have documented the ways in which the US military could have achieved many of their desired targeting outcomes with MRVs, avoiding the negative signaling effects of MIRVs.[75]

Allowing technological development to outpace strategic thinking also creates a ratchet effect under which it becomes politically difficult *not* to deploy a technology once it has been developed, for fear of looking weak or diminishing

one's notional bargaining position vis-à-vis a competitor state. In the Cold War case, declassified US government documents demonstrate how the American leadership was reluctant to freeze MIRV development or negotiate restrictions on MIRVs for fear of giving up an already-acquired technological edge. Some of this fear was particular to the arms control negotiations at play in the SALT talks. More generally, however, by allowing the technical community to press ahead with development of MIRVs, US officials put themselves in a political position in which it became almost impossible to limit the deployment of the technology—either on the basis of sensible cost-benefit calculations, or bilateral negotiations—for fear of ceding "advantage."[76]

Decades from now, Indian political leaders may look back on their development of MIRVed ballistic missiles with satisfaction. Or, like many American historians and strategists, they may wish that they had exercised more strategic oversight, restrained the technical community from proceeding on autopilot, and considered ways to dampen open-ended competition on strategic delivery systems. Reflecting on the quantitative and qualitative arms buildup by the Soviet Union in the 1970s and 1980s, American policymakers have in retrospect noted the influence of MIRVs as a contributing factor to the strategic competition. One former National Security Council staffer observed that the choice to abandon limitations on MIRVs "was a truly fateful decision that changed strategic relations, and changed them to the detriment of American security."[77] No less a figure than Henry Kissinger, who played a key role in removing MIRV limitations from the SALT I talks, later expressed regret about the decision, acknowledging "I wish I had thought through the implications of a MIRVed world more thoughtfully in 1969 and 1970 than I did."[78]

Whether or not Indian political leaders ever face such regrets, they would be wise to consider the regional implications of moving forward with MIRVed missiles. In addition, they would benefit by approaching flight-testing with care, and by controlling public statements and other forms of signaling rather than leaving these to the whims of the defense research establishment. More broadly, it is not too late for the Indian political leadership to use the country's MIRV development program as an example by which to signal their intent to more carefully exercise control over technological developments that might affect the contours of India's strategic competition with its neighbors.

## *Driving Open-Ended Competition with Pakistan*

Indian arguments about the value of MIRV development may have narrow appeal in the context of Sino-Indian competition, but are of more dubious merit

in a wider assessment of India's security environment. Although Indian officials may like to think that they can develop technologies with reference only to their competition with Beijing, a decision by New Delhi to move ahead with MIRV flight-testing in response to China could have a uniformly negative impact on deterrence stability between India and Pakistan. This may seem counterintuitive, given the delivery systems on which India is reported to be considering the addition of MIRV capabilities. For example, the Agni-V variant on which the DRDO plans to add MIRVs has a range of 5,000 km, and is plainly designed to range major Chinese cities.

Notwithstanding this, Pakistani planners have reason to be concerned about the implications of India's MIRV program. For while the DRDO has been clear that the initial MIRV development is focused on the Agni-V/VI, Pakistan might reasonably assume that MIRV technology would eventually be adapted for use on Indian missiles that have a smaller diameter, such as the intermediate-range Agni-II and -III, which presumably are the default deployed platforms for targeting Pakistan. Planning against worst-case scenarios, Pakistani strategists would also have to assume that, in a crisis, even long-range Indian MIRVed missiles could be redirected for deployment against Pakistani targets. It is therefore not surprising that, both in public writings and private conversations, Pakistani strategists have expressed concern about the Indian MIRV program as being "directed toward [both] China and Pakistan."[79]

Pakistan's likely response to continued Indian MIRV development would be to pursue countermeasures in the near-term that have the effect of accelerating the Indo-Pakistani arms competition presently underway. Pakistan might pursue one of several paths. One possibility would be to explore BMD technology, though this path is improbable given the enormous cost, technical hurdles, questionable effectiveness, and challenges posed by the exceptionally short warning times that obtain in the subcontinent. Alternately, some commentators have called for Pakistan to acquire MIRVs of its own.[80] Islamabad might reckon that MIRVs — or even MRVs — could bolster the reliability of its second strike, or be used as necessary as a counterforce tool against fixed targets.[81] This path is possible; however, MIRV technology is formidable and expensive. While China and Pakistan are known to have shared a long collaboration on ballistic missiles, and in theory China could share MIRV technology with Pakistan in an attempt to draw Indian defense resources away from the Sino-Indian theater, there has been no indication that Pakistan would consider MIRVs a priority area for technology transfer.[82]

If Islamabad were to conclude that India's pursuit of MIRVs raises the overall risk to Pakistan of any future Indian BMD deployment, it may choose to accelerate technologies designed to counter missile defense. These may include increasingly sophisticated penetration aids for its existing ballistic missiles. A more asymmetric approach would be to focus on cruise missiles, which can be designed with a low radar signature, and can operate at an elevation and with an angle of attack that make them very difficult to counter with BMD systems. Specifically, Pakistan might choose to expand the number of nuclear-armed road-mobile Babur (Hatf-VII) cruise missiles in its arsenal, diversify the delivery platforms for its air-launched Ra'ad (Hatf-VIII) cruise missiles, or to develop longer-range or stealthier versions of the same.

Hedging against real or perceived counterforce capabilities implied by India's pursuit of MIRV technology, Pakistan might choose to bolster the survivability of its existing arsenal. Fearing an Indian surprise attack, Pakistan could place its nuclear weapons on a higher state of alert. A launch-on-warning posture would be a dangerous, technologically complicated, and largely unnecessary step, but this option could become attractive during a crisis in which India possesses MIRVs and BMD. Alternately, recognizing that MIRVed Indian missiles could be used to penetrate hard targets, Pakistan might elect to reallocate some of its warheads to more dispersed but less hardened sites — thus increasing security and safety risks.[83]

Even Pakistan's less drastic alternatives, such as continuing its current path of adding more mobile ballistic- and cruise-missile delivery platforms, have obvious negative security implications. Pakistan has already flight-tested the 60-km-range Nasr (Hatf-IX) ballistic missile with "shoot and scoot" attributes designed for mobile deployment in a battlefield setting.[84] As detailed elsewhere in this volume, short-range systems such as these raise a host of safety and security challenges, and present numerous operational and command and control risks in a crisis environment.[85] These risks would increase — not linearly but exponentially — if Pakistan were to develop and deploy these systems at scale. Any move by India, therefore, that incentivizes Pakistan to divert a greater percentage of its warheads for use on mobile systems for reasons of survivability rather than simply targeting effectiveness would introduce new risks to the India-Pakistan security equation.

Even if the optimists are correct and Indian MIRV development results in no overt change to Pakistani force-planning, it nonetheless could erode deterrence stability by introducing uncertainty about the long-term trajectory of the size of India's nuclear arsenal. The Indian government has given no clear sign as

to what it considers a sufficient arsenal to ensure credible deterrence, though independent analysts have proposed figures of 200 weapons or more.[86] Pakistan already takes an expansive view of what constitutes the requirements for its own credible deterrence, and any suggestion that India may be reaching for some kind of parity with the Chinese nuclear arsenal is almost certain to negatively affect its own assumptions about fissile material and delivery-vehicle sufficiency.[87]

One mechanism by which Pakistan might address its uncertainty about India's future arsenal would, of course, be to move forward with negotiations on a Fissile Material Cut-off Treaty (FMCT) in the UN Conference on Disarmament. An FMCT could prove to be a valuable stabilizing mechanism for the India-Pakistan and India-China deterrence relationships. Pakistan has blocked the start of international negotiations on the FMCT, and has been reluctant to negotiate a treaty that does not account for India's existing fissile stocks. While Pakistan's opposition to the FMCT may be more political than substantive, Indian MIRV development and flight-testing could in fact throw into sharper relief for Pakistan its decision about whether to pursue multilateral limitations on fissile material competition, or seek aggressively to match Indian production.[88]

Even with a multilateral agreement limiting fissile production, it would be naïve to suggest that India can do much in the near term to change Pakistan's deep-seated and ideologically grounded fears of Indian aggression. For their part, Indian commentators are correct when they suggest that the Pakistan military routinely exaggerates Indian defense capabilities in order to justify its own conventional and nuclear modernization. Even so, this does not mean that Pakistan makes decisions about the size of its arsenal and its force posture entirely independently of India.

Public statements by Indian scientists that promote the "force multiplier" aspect of MIRVs, their utility in destroying hardened targets, and their value in helping India to more efficiently compete with the Chinese nuclear arsenal — particularly in the absence of official correctives — quite understandably fuel Pakistani distrust of Indian nuclear "minimalism," and make more likely a continued and open-ended competition in terms of fissile material production, warhead miniaturization, and diversity of delivery systems.[89]

### Presaging a Doctrinal Shift to Counterforce Targeting

The development, flight-testing, and eventual deployment of Indian MIRVs have the potential to presage troubling changes in Indian nuclear doctrine. This would not happen quickly, but over the medium term a tested and deployed

MIRV capability could drive Indian planners to stray further from a "minimum credible deterrence" posture and toward more risky, destabilizing, and expensive counterforce targeting.

In the near term, the most realistic rationales for MIRVs have to do with maintaining the survivability of the nuclear force, and maintaining credible countervalue retaliatory capabilities. With respect to the former, it is not clear whether Indian MIRVs would in fact increase survivability. As Vipin Narang and Chris Clary have argued, "dispersed single-warhead missiles seem more stable" than a MIRVed force — holding the number of warheads equal — because dispersal optimizes survivability.[90] If, however, India holds or expects to hold surplus supplies of fissile material, or if the cost of deploying and securing delivery systems is substantial, MIRVs could represent a more efficient option to bolster survivability. The testing of Chinese MIRVs may, in addition, compel India to consider the survivability of its arsenal more seriously than it once did.[91]

Similarly, MIRVs could be seen as consistent with existing Indian nuclear doctrine insofar as they bolster the credibility of India's commitment to massive retaliation in the event of a nuclear strike.[92] This does not mean, however, that MIRVs are *necessary* to maintain the commitment. Beyond a certain point, increasing the number of potential countervalue targets is subject to diminishing returns as a means of signaling resolve.

Over the medium term, MIRVs could have a more pernicious effect by putting pressure on Indian doctrine to shift away from countervalue targeting. India and China have heretofore adopted relatively stabilizing and minimalist nuclear postures.[93] The continued flight-testing and introduction of MIRVs by China, and presumably at some future date by India, could give nuclear planners more options to consider with respect to counterforce targeting. These options may eventually put pressure on India's commitment to massive retaliation. This could happen in two distinct but related ways.

First, since MIRVed missiles have independently targetable warheads, they are well-suited for use against military installations or hardened sites as part of retaliatory strikes aimed at damage limitation. Any move by Indian strategists to plan against damage limitation objectives may not be destabilizing in the near term, but does point toward open-ended requirements for fissile material and strategic delivery systems. In short, once an objective is established to be able to target some or all of an adversary's nuclear sites following a first strike by that adversary, the requirements become both dynamic and expansive.

Second, the availability of potential counterforce platforms such as MIRVs could drive Indian strategists to more seriously consider limited nuclear options (LNOs). As is noted elsewhere in this volume, the Indian strategic community is already under pressure to find alternatives to a massive retaliation doctrine that is increasingly seen as lacking credibility.[94] The allure of LNOs is that they could in theory deliver a proportional retaliatory nuclear response — likely against military or industrial targets — without escalating to all-out nuclear war. Planning for LNOs did not serve the United States or the Soviet Union well, and is neither a sensible nor a practical option for India's nuclear planners in the near term. Doctrinally and operationally it is fraught with risks (e.g., what is proportional, and how is escalation controlled?). Numerically, it demands an expanded force posture. And practically, it requires sophisticated intelligence, surveillance, and reconnaissance (ISR) capabilities that India does not — and is unlikely to — possess in the next decade.

All the same, the flight-testing and induction of MIRVs atop India's ballistic missiles would undoubtedly provide a fillip to those in the Indian system who believe that a limited nuclear force focused on countervalue targeting and massive retaliation is untenable. As pressures grow for building out a force posture consistent with damage-limitation objectives and LNOs, the presence of MIRVs and other technologies well-suited to counterforce targeting will only make doctrinal revisions away from minimum credible deterrence more appealing.

Looking further down the road, some commentators have suggested that Indian MIRV deployments could eventually lead to the most dramatic counterforce planning option, in which India develops the capability for a decisive first strike against one or more of its adversaries.[95] In theory, MIRVs can reverse the exchange ratio — the number of adversary weapons destroyed by a missile in a counterforce strike — from favoring the defending side to favoring the attacking side.[96] In the Cold War context, this created perverse incentives for the Soviet Union either to strike first in a crisis, or to build up its arsenal to overcome the new exchange ratio.[97]

The risk of New Delhi attempting a decisive first strike is almost certainly exaggerated given the historically cautious approach to nuclear planning that has pervaded Indian strategic culture.[98] Such a shift with respect to planning against Pakistan, for example, would require abandoning India's no first use doctrine; obtaining additional ISR capabilities to identify Pakistani nuclear assets both in peacetime and in a crisis environment; and risking horrific damage to Indian cities in the event of failure.

The impact of MIRVs and other counterforce instruments may, however, be felt in terms of perceptions and planning. Even if Pakistan considers a dramatic shift in India's nuclear posture to be unlikely, it may still worry that Indian MIRVs signal an intention to engage in counterforce targeting.[99] Although the overall probability of an escalatory conflict might remain relatively low, Indian MIRV capability would in theory increase Pakistan's incentives to engage in a decisive first strike of its own — something its doctrine does not preclude — since destroying multiple-warhead missiles is a higher-value proposition than single-warhead missiles.

Speculations about first-strike risks, however remote or unlikely, do highlight a key challenge associated with MIRVs: it is practically impossible to signal to a potential adversary that they do not constitute the use of nuclear weapons in offensive, rather than defensive, ways. Both the academic literature and historical experience suggest that strategic competitions in which the offensive or defense posture of weapons is unclear are more likely to result in a security dilemma that drives an arms race and makes deterrence stability a chimera.[100]

The American experience with MIRVs should discomfit advocates of the Chinese and Indian programs. In 1969 and into 1970, the Nixon administration tried to convince skeptical members of the US Congress that MIRVs would not further accelerate the arms race between the United States and the Soviet Union. (Most members were not convinced, but the program moved forward anyway.) Declassified documents show that even as President Nixon was cynically considering with his National Security Council staff ways of declaring that US MIRVs were "only for defensive purposes," senior members of his administration recognized that the Soviets "must look at our MIRV system as something that permits the Americans to upgrade, make more accurate, and give a first strike capability."[101] Everyone recognized, in short, that it was impossible to signal to a potential adversary that MIRVs provided a purely retaliatory capability.[102]

If there were any reasonable way to signal that MIRVs were deployed solely for assured second strike, it would be to place them on submarine-based rather than land-based platforms. While sea-based MIRVs could in theory be used for offensive or counterforce purposes, they are much more likely than ground-based systems to be perceived as defensive in nature and designed principally for countervalue retaliation in extremis.[103] This perception is derived from their relatively greater survivability, from the ways in which states have traditionally articulated planning and doctrine for submarine-based nuclear forces, and from some of the targeting challenges inherent in using these forces. Since Pakistan's

nuclear forces are presumed to be road-mobile, any counterforce use against them by India would require dynamic, real-time targeting; the command and control lag between the Nuclear Command Authority and field commanders would almost certainly be more pronounced with sea-launched ballistic missiles than with ground-launched systems, making submarines a poor delivery platform for counterforce strikes.

If New Delhi were to place a priority on containing the growth of Indo-Pakistani strategic competition, it could choose to signal its continued commitment to countervalue targeting and declare that it would deploy MIRVs only on its SSBNs and not on ground-launched systems. Unfortunately, China's apparent decision to test a ground-launched MIRVed ballistic missile means that India would find it difficult to adopt a unilateral limitation on ground-launched MIRVs.

Ultimately, there is no reason to believe that Chinese and Indian development, flight-testing, and deployment of MIRVs would have an immediate impact on strategic competition in the subcontinent. Neither is there a reason to think that credible first-strike postures are anything but a long way off. Chinese and Indian MIRVs would, however, signal a move toward more serious consideration of counterforce targeting. They would undoubtedly drive open-ended competition between India and both Pakistan and China, making an agreement on fissile material cut-off even more difficult to reach. And they would begin to shift incentives within the Indian defense system to align procurement, posture, and even declaratory doctrine away from the countervalue orientation that has characterized India's minimum credible deterrent.

## Conclusion

India's pursuit of MIRVs is not taking place in a vacuum. One cannot decouple India's decisions about this technology from those of China. Seen in this context, India has several options for the way in which it moves forward with its MIRV program. It could choose to compete assertively with China, prioritizing MIRV flight-testing and deployments, and recognizing that it may have to deal with downstream negative consequences in its deterrence relationship with Pakistan. Alternately, it could choose to compete elsewhere, declining to flight-test MIRVs and investing instead in bolstering the reliability and credibility of its long-range single-warhead strategic delivery systems, thus signaling that it remains fully committed to a minimal deterrence posture. This approach would arguably be the most stabilizing, but is also the least likely.

India has a more calibrated set of options as well. It could quietly suggest a parallel policy of contingent restraint with China. It takes several flight-tests to demonstrate the operational capability of a new ballistic missile technology. New Delhi could communicate to Beijing — on a deniable basis, if necessary — that as long as China does not engage in further MIRV flight tests, India would refrain from doing so as well. (A complementary understanding could be reached regarding deployment of missile defenses for reasons other than to protect national command authority.) This would place the onus squarely on Beijing for the destabilizing consequences of MIRVing. The strategic asymmetries in the US-China-India triangle, along with China's long-standing reluctance to discuss nuclear matters with India, could make it difficult for both sides to come to such an agreement. Even a pause in MIRV flight-testing, however, could be of value.

If China chose to continue flight-testing, India could then match those tests — but not move to widespread deployment of MIRVs. New Delhi would thus demonstrate a capability-in-waiting, but would signal that it had no interest in building out ground-launched MIRV deployments at this time, perhaps reserving the technology for later use on long-range SLBMs. It could also, as a stabilizing gesture to Pakistan, clarify that any future MIRVing would be limited to its longest-range missiles. Under this more calibrated approach, India would still face downside risks to deterrence stability with Pakistan. It might also face the risk of diminished deterrence credibility with China. This middle path would, however, signal Indian restraint, help to dampen strategic competition in delivery systems, and demonstrate a continued commitment to a minimal deterrent.

Taking a wider view, it is important for India to consider the ways in which its MIRV program may also affect perceptions of other defense technologies currently under development. Even if India feels compelled to follow China and assertively compete on MIRV testing and deployments, it would do well to recognize that this significantly raises the stakes for India's decision-making and messaging about its ambitions with respect to ballistic missile defense. All things being equal, a country's BMD capability is more likely to be perceived by adversaries as potentially offensive in nature if it is complemented by MIRVed ballistic missiles. If India appears committed to a MIRV program, Pakistan might reasonably assume that it ought to take the prospect of Indian BMD more seriously, and proceed with haste to develop countermeasures and grow its force structure to deal with an Indian military that could one day launch MIRVed counterforce strikes from under the protection of a BMD shield.

If Indian political leaders find the notion of MIRVs being used offensively in combination with ballistic missile defenses as fanciful and far-fetched, they partially have themselves to blame. The Indian government has been almost as opaque about its BMD ambitions as it has about its MIRV development program, allowing the defense research establishment to define the public parameters of discussion and signal capabilities to potential adversaries.[104]

In light of its MIRV program, the Indian political leadership would be wise to consider the strategic advantages of articulating a more carefully bounded BMD agenda that at a maximum suggests a narrow focus on protecting critical national command infrastructure rather than facilitating offensive war-fighting plans. This would be valuable, as the DRDO's public articulations of its BMD ambitions are, for example, often broader than the ones that are described in private by officials from the Ministry of External Affairs.[105] A BMD system explicitly limited to protecting national command and control infrastructure is considerably less likely to further destabilize the Indo-Pakistani strategic competition than something resembling a national missile defense program or an architecture focused on the defense of a few select cities — however inadequate or faulty it might be.

A clear public statement by India's civilian leadership about the contingent nature and strategic rationale for MIRVs and for BMD, and the parameters under which they will and will not be deployed, could set an important precedent for oversight of the defense research establishment. At a minimum, it would help to correct the perception that the DRDO has the prerogative to implicitly set strategic nuclear policy. More broadly still, it would reaffirm that India's nuclear doctrine of "credible minimum deterrence" is not subject to revision solely on the basis of promising research and development results, and that technological self-restraint on the part of the Indian government is not necessarily inconsistent with its strategic self-interest.

# Endnotes

1. This chapter was prepared while Joshua T. White was employed at the Stimson Center. The opinions expressed in this article are the author's own and do not reflect the view of the United States government.

2. The authors would like to thank Christopher Clary, Jack Gill, Dhruva Jaishankar, Feroz Khan, Michael Krepon, Shane Mason, Jeffrey Schreiner, Julia Thompson, and others who wish to remain anonymous for their helpful comments. The views reflected here are those of the authors alone.

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# CONTRIBUTORS

**Rasul Bakhsh Rais** is a Professor of Political Science in the Department of Humanities and Social Sciences, Lahore University of Management Sciences (LUMS). Before joining LUMS, he taught international politics at the Quaid-i-Azam University, Islamabad for 22 years, and headed the Area Study Center. He took time off from LUMS and worked as Director General of the Institute of Strategic Studies Islamabad during 2013-14. He is author of *Recovering the Frontier State: War, Ethnicity and State in Afghanistan*, *War without Winners: Afghanistan's Uncertain Transition after the Cold War, Indian Ocean and the Superpowers: Economic, Political and Strategic Perspectives*. He has published widely in professional journals on security and political issues. His current research interests are: modernism, the challenge of radical Islam in Pakistan, war and state in Afghanistan, and the fall of the Bahawalpur state.

**Kyle Deming** was an intern for the Stimson Center's South Asia program. He graduated Phi Beta Kappa from the University of Michigan in 2013 with a B.A. in Political Science and History. He was the William J. Taylor Intern for the Project on Nuclear Issues at the Center for Strategic and International Studies. He plans to attend Georgetown University's M.A. program in Security Studies in fall 2015.

**Manoj Joshi** is a Distinguished Fellow at the Observer Research Foundation, New Delhi, heading its national security initiative. Prior to this, he was a journalist at *The Hindu*, *Times of India*, *Hindustan Times*, and *India Today*. In 2011 he was appointed by the Government of India to the Task Force on National Security chaired by Mr. Naresh Chandra to propose reforms in the national security system of the country. He has been a member of the National Security Council's Advisory Board. He is a graduate from St Stephen's College, Delhi University and holds a Ph.D. from the School of International Studies (SIS), Jawaharlal Nehru University.

**Shashank Joshi** is a Senior Research Fellow at the Royal United Services Institute (RUSI) in London, and a Ph.D. Candidate at the Department of Government, Harvard University. He previously graduated from Gonville and Caius College,

University of Cambridge. He is broadly interested in international security in South Asia and the Middle East, with a particular interest in the foreign, security, and defense policies of India. On the subject of nonproliferation, he has previously published on the implications of Pakistani tactical nuclear weapons and a monograph on Iran's nuclear program. He has written for publications including the *Journal of Strategic Studies, The Washington Quarterly, Asian Survey, Survival, Orbis,* and the *RUSI Journal.*

**Michael Krepon** is the Co-Founder of the Stimson Center and Director of its South Asia program. He is the author or editor of twenty-one books, including *Better Safe than Sorry: The Ironies of Living with the Bomb*; *Deterrence Stability and Escalation Control in South Asia*; *Nuclear Risk Reduction in South Asia*; *Escalation Control and the Nuclear Option in South Asia*; *Global Confidence Building: New Tools for Troubled Regions*; and *Crisis Prevention, Confidence Building, and Reconciliation in South Asia.*

**Shane Mason** is a Research Associate with the Stimson Center's South Asia program. He previously served as a Scoville Fellow at the Carnegie Endowment for International Peace. He graduated magna cum laude from Pepperdine University with a degree in political science, and received his M.A. in nonproliferation and terrorism studies from the Middlebury Institute of International Studies at Monterey.

**Jeffrey D. McCausland** is a retired Army Colonel with more than 30 years of military experience. He has served in a variety of operational and staff positions, including command of a field artillery battalion during Operations Desert Shield and Storm. During the Cold War, he was assigned to numerous units equipped with tactical nuclear weapons and participated in both training as well as planning for their employment. He has also served on the National Security Council Staff during the Kosovo crisis and in the office of the Deputy Chief of Staff for Operations on the Army Staff in the Pentagon. His final Army assignment was as Dean of Academics at the US Army War College. He currently serves as a Visiting Professor at Dickinson College and is also the Distinguished Visiting Professor of Research and Minerva Chair at the Strategic Studies Institute, U.S. Army War College.

**Sarang Shidore** is an independent researcher and consultant based in Austin and currently Visiting Scholar at the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin. His areas of research focus are strategic futures and energy/climate policy, with several publications in strategic culture and Indian foreign and security policy. These include, most recently, a chapter on the impact of Indian strategic culture on the Iran relationship in the volume *India's Grand Strategy: History, Theory, Cases* (Routledge, 2014). He previously co-led a comprehensive scenario planning study on global security in the years 2030 and 2050 at the Institute for Defence Studies and Analyses in New Delhi in partial collaboration with the Development, Concepts, and Doctrine Center (DCDC) of the U.K. Ministry of Defence. He holds three Master's degrees — in International Studies, Mechanical Engineering, and Aerospace Engineering — with a prior 15-year career in the engineering software arena.

**Julia Thompson** is a Research Associate with the Stimson Center's South Asia program. She graduated from Georgetown University with a degree in international politics and from King's College London with an M.A. in war studies, where she focused on counter-terrorism and nonproliferation. She co-edited *Deterrence Stability and Escalation Control in South Asia*.

**Joshua T. White** is currently Senior Advisor & Director for South Asian Affairs at the National Security Council staff. This chapter was prepared while White served as Senior Associate and Co-Director of the South Asia program at The Stimson Center. Prior to joining Stimson, he served as Senior Advisor for Asian and Pacific Security Affairs in the Office of the Secretary of Defense, a position he held in conjunction with an International Affairs Fellowship from the Council on Foreign Relations. He has spent extensive time in South Asia, interviewing Islamist leaders in Pakistan's remote tribal areas, meeting with politicians and military officials, and researching trends in nuclear deterrence and strategic stability. He graduated magna cum laude, Phi Beta Kappa from Williams College with a double major in history and mathematics, and received his Ph.D. with distinction from The Johns Hopkins School of Advanced International Studies in Washington.

# DETERRENCE
# INSTABILITY
## & NUCLEAR WEAPONS IN SOUTH ASIA

Deterrence between India and Pakistan is becoming less stable with the passage of time and an increase in nuclear weapon capabilities. India and Pakistan have not addressed basic issues in dispute, nor have they agreed to set them aside. Direct trade and other means of connectivity remain purposefully circumscribed, and spoilers who oppose Pakistan's rapprochement with India are poorly constrained. In 2015, India and Pakistan are no closer to resolving their differences than they were seven years ago, after members of Lashkar-e-Taiba carried out attacks against Mumbai landmarks, including the central train station, two luxury hotels, and a Jewish center.

The essays in this volume highlight how doctrinal, strategic, and technological developments contribute to growing deterrence instability in South Asia. Key elements of Indian and Pakistani strategic culture intersect at times in negative, reinforcing ways. Pakistan and India continue to diversify their nuclear weapon capabilities in ways that undermine stability. Two kinds of delivery vehicles — short-range systems that must operate close to the forward edge of battle, and sea-based systems — are especially problematic because of command and control and nuclear safety and security issues. Taken together, these chapters point to serious challenges associated with increased nuclear dangers unless leaders in India and Pakistan work to resolve their grievances, or consider measures to mitigate their costly and risky strategic competition. If not, deterrence instability on the subcontinent will grow in the decade ahead.

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