DETERRENCE INSTABILITY
& NUCLEAR WEAPONS IN SOUTH ASIA

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AN EVOLVING INDIAN NUCLEAR DOCTRINE?

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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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