

## Dynamics of Deterrence & Strategic Equilibrium in South Asia

Shams uz Zaman\*

### Abstract

*In the post Cold War era, nuclear weapons have again gained significance. Nuclear weapons have no military utility but serve the purpose of deterrence and peace. Their utility is conditional to their non-usage. Possession of nuclear weapons can only become worthwhile for a state if these weapons are effectively crafted in the national security and defence policy. In South Asia, India and Pakistan have adopted various measures to strengthen their deterrence postures. To understand the growing risks in the region, it is imperative to be cognizant of the trends and development in deterrent equation pivoting around physical capabilities, involving quantification, and psychological stresses, involving posturing and signalling. In South Asia, nuclear and conventional asymmetries are growing compelling Pakistan to increase its reliance on nuclear weapons to maintain regional strategic equilibrium. This situation may lead to regional arms race if these trends continue to flourish.*

**Key words:** Deterrence, Nuclear, South Asia, Strategic Stability, Doctrine.

### Introduction

The threat of use of force towards achieving political objectives has been a persistent phenomenon since the history of warfare that can be traced back to human existence. Prior to nuclear age, the nature of force used against each other, more or less, remained the same and was considered

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\*The author is an academic and independent research scholar.

superior owing to factors like quantity, quality, military training and superior tactics/strategy etc. Invention of gunpowder was a revolutionary step in the nature of warfare. Wars, which primarily were fought with the help of primitive weapons like crossbows, swords javelins and chariots, suddenly became more decisive and casualty heavy due to destructive nature of the gunpowder. However, nuclear weapons changed the face and nature of warfare. It was the absolute destructive power of nuclear weapons that prompted one of the most influential nuclear strategists to come up with a magnificent quote, "Thus far the chief purpose of our military establishment has been to win wars... From now on its chief purpose must be to avert them... It can have almost no other useful purpose."<sup>1</sup> The destructive nature of nuclear weapons, as displayed at the end of the World War II, not only was extremely annihilative in nature but for the first time a threat to the existence of human civilization. It was this reason which deemed nuclear weapons not for war fighting but rather political weapons which serve no other purpose except to deter an aggression by a powerful adversary.<sup>2</sup> It, therefore, becomes imperative to understand the nature of nuclear weapons and their purpose in constituting an effective deterrence strategy.

### Conceptualizing Strategy and Deterrence

Strategy has wide application in today's world almost in all the major fields including business, telecommunications, education, economy etc. and of course military. However, the term in this paper would be discussed entirely from the military point of view. According to Liddell Hart, strategy is "the art of distributing and applying military means to

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<sup>1</sup>Bernard Brodie, "The Development of Nuclear Strategy", *International Security*, Vol. 2, No. 4, (Spring 1978), p. 65.

<sup>2</sup>George Perkovich, "Put Nuclear Weapons on the Agenda", *Bulletin of the Atomic Scientists*, Vol. 47, No. 5, June 1991, p 22. See also: Scott D. Sagan and Kenneth N. Waltz, *Spread of Nuclear Weapons – A Debate Renewed* (New York: W. W. Norton & Company, Inc, 2003), pp. 4-9, 12-17.

fulfil the ends of policy”<sup>3</sup> while as per Colin S. Gray, “Military strategy is the direction and use of force and the threat of use of force for the purposes of policy as decided by politics”<sup>4</sup>. According to Encyclopaedia Britannica, Strategy is the science or art of employing all the means (i.e., military, economic and other) towards achieving the objects of war.<sup>5</sup> It pivots around three focal quotients which are “ends or objectives, ways or concepts, and means or resources”.<sup>6</sup>

Deterrence although is an old concept but in modern times, development of nuclear weapons has fundamentally changed the concept due to their capability to annihilate the entire human civilization. The most effective form of deterrence thus has been identified as the nuclear deterrence. Deterrence, forming the core of the national security strategy, is a complex phenomenon but put in simple terms it means the anticipated punitive cost of aggression or an extremely undesirable action which seemingly could provoke an adversary to retaliate in a manner thus outweighing any presumed benefits. Deterrence is directly proportional to the punitive cost, implying the higher the cost, the more stable and robust it would be. In case the perceived cost of retaliation becomes acceptable, deterrence equation would be extremely unstable, risking a failure. Deterrence thus becomes a matter of perception and has psychological as well as physical manifestations which are proportional to the adversaries' known and demonstrated capabilities actually possessed in real time.<sup>7</sup> An effective and credible deterrence would entail certain quantification in tangible

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<sup>3</sup>B. H. Liddell Hart, *Strategy: Second Revised Edition* (New York: Penguin Books, 1991), p. 321.

<sup>4</sup>Colin S. Gray, *The Strategy Bridge: Theory for Practice* (Oxford: Oxford University Press, 2010), p. 262.

<sup>5</sup>Eliot A. Cohen, “Strategy”, *Encyclopædia Britannica*, undated, <http://www.britannica.com/EBchecked/topic/568259/strategy>

<sup>6</sup>David Jablonsky, “Why is Strategy Difficult?,” in *Volume I: Theory of War and Strategy*, ed. J. Boone Bartholomees, Jr., (Pennsylvania, Strategic Studies Institute, 2008), p. 3.

<sup>7</sup>K. Subrahmanyam, *Nuclear Myths and Realities* (New Jersey: Humanities Press Inc, 1982), p. 52.

terms before adopting psychological means to dissuade an adversary from adopting a course of action which involves grave risk or necessitates aggression.<sup>8</sup>

Deterrence is fundamentally different from compellence. In compellence the threat of force is aimed at convincing the other side to comply with the coercer's demands and to act according to notified set of propositions while deterrence is used by coercer to discourage the opponent or adversary from adopting a particular course of action. Compellence is usually regarded as an offensive policy and is employed under circumstances envisaging defiance by a state thus presenting it with one or more set of options, while deterrence is mostly a defensive policy used against an adversary by threatening it with an unacceptable cost.<sup>9</sup> Deterrence can only be stable if it is premised on mutual vulnerabilities. States in possession of adequate capabilities to inflict huge destruction onto an adversary thus present a model of stable deterrence. However, in case either of the state enjoys an overwhelming advantageous position due to extremely superior strategic forces or has successfully established a fortress of defence to make it immune from the adversary's missiles and strategic bombers' strike capabilities, the deterrence equation would be extremely unstable,<sup>10</sup> and tilted in favour of the stronger state thus encouraging it to resort to compellence or nuclear blackmail. Deterrence has been defined and categorized into various types and forms but debating on these types is beyond the scope

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<sup>8</sup> Andre Beaufre, *Deterrence and Strategy* (London: Faber and Faber, 1965), pp. 24-25.

<sup>9</sup> Gary Schaub Jr., "Deterrence, Compellence and Prospect Theory", *Political Psychology*, Vol. 25, No. 3, Special Issue, (June 2004), pp. 389-390.

<sup>10</sup> John Newhouse, "The Missile Defence Debate – To Deploy or Not to Deploy", *Foreign Affairs*, Vol. 80, No. 4, July/August 2001, <http://www.foreignaffairs.com/articles/57057/john-newhouse/the-missile-defense-debate> See also: Russ Wellen, "Missile Defence is not the only Weapons System that Undermines Nuclear Deterrence", *Foreign Policy in Focus*, September 23, 2014, <http://fpif.org/missile-defense-isnt-weapons-system-undermines-nuclear-deterrence/>

of this paper.<sup>11</sup> However, there is a need to know about two of its main categories.

### **Main Variants of Deterrence**

Fundamentally there are two main variants in the theory of nuclear deterrence. The first is based on the threat of punishment, called as “deterrence by punishment” while the other based on the concept of defence and is known as “deterrence by denial”.<sup>12</sup> Deterrence by punishment is comparatively simple and premised on the retaliatory or the punitive cost. A retaliatory cost that amounts to an “assured destruction” would deter any rational adversary from aggression and if this destructive capability is possessed bilaterally, it would be known as 'Mutual Assured Destruction' (MAD). Deterrence by denial is comparatively a complex phenomenon which is based on the assumption that deterrence might eventually fail and thus an elaborate system of defence capable of withstanding a nuclear strike will have to be developed which could convince the enemy that its aggression would meet a certain failure. This elaborate defensive mechanism would entail a national defence against a nuclear attack, robust command and control system capable of withstanding a nuclear strike, a nuclear war fighting capability and strategic forces to carryout warfare under nuclear environments,<sup>13</sup> which consequently becomes an extremely difficult task. In South Asia, deterrence of India and Pakistan is premised on the concept of retaliation and punishment rather than denial.

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<sup>11</sup>Due to involvement of psychological, economic, geographical, social, ideological and military factors in forming up a Deterrence, it has been categorized by various scholars in different like for example offensive, defensive, active, passive, general, specific, immediate, total, direct, indirect, positive, negative, extended, absolute, relative, existential, finite and further into types like Type 1, Type 2 and Type 3 etc.

<sup>12</sup>Arpit Rajan, *Nuclear Deterrence in South Asia – China, India and Pakistan* (New Delhi: Sage Publications India Pvt Ltd, 2005), pp. 60-65.

<sup>13</sup>Ibid.

## Deterrence and Strategic Stability in South Asia

Stability in a region means absence of factors which could trigger or lead to war. Whenever such factor emerges, situation in a region would lead towards instability. Strategic stability implies that due to mutual vulnerability of strategic forces on both the sides, neither side feels compelled to initiate a nuclear first strike on the shared assumption that showing restraint, even in a crisis, is far more advantageous than striking first.<sup>14</sup> This concept was classically demonstrated during the Cold War era once the US and Soviet Union, despite possessing thousands of nuclear warheads, didn't actually adopt the 'nuclear first strike' strategy against each other which entails a decapitating nuclear strike against an adversary thus annihilating its capability to retaliate back. Consequently, both states remained vulnerable to each other's nuclear strike forces which discouraged either side from striking first. Subsequently, many scholars considered possession of an 'assured second strike' capability imperative to the strategic stability in a bilateral deterrence equation.<sup>15</sup> Prior to development of nuclear weapons, deterrent and war fighting capabilities were used in synonymous terms. However, in the nuclear age, deterrent principally refers to the possession of nuclear weapons by a state along with the delivery means.<sup>16</sup> In the context of South Asia both India and Pakistan lack an assured 2<sup>nd</sup> strike capability thus ensuing stability in the region. India nevertheless is vigorously pursuing a 2<sup>nd</sup> strike capability, along with Ballistic Missile Defence (BMD) shield, which would profoundly alter the power equilibrium in favour of India that will ultimately drive the region towards an unending arms competition.

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<sup>14</sup>Elbridge Colby, "Defining Strategic Stability: Reconciling Stability and Deterrence", in *Strategic Stability: Contending Interpretations*, (ed.), Elbridge Colby and Michael S. Gerson, (Pennsylvania, Strategic Studies Institute, 2013), p. 48.

<sup>15</sup>Michael S. Gerson, "The Origins of Strategic Stability: The United States and the Threat of Surprise Attack", in *Strategic Stability: Contending Interpretations*, (ed.), Elbridge Colby and Michael S. Gerson, (Pennsylvania, Strategic Studies Institute, 2013), p. 35.

<sup>16</sup>Zafar Iqbal Cheema, *Indian Nuclear Deterrence: Its Evolution, Development and Implications for South Asian Security* (Karachi: Oxford University Press, 2010), pp. 317-318.

## Main Elements of Deterrence Strategy of South Asian Rivals

According to the Realist school of thought, all states perform the same functions while striving to survive and prosper in the competitive global environments. States formulate their policies on the rationale of costs and benefits calculations, despite the fact that sometimes their choices defy the logic of rationality.<sup>17</sup> The formulation of national purpose is subscribed to Grand National Policy which mainly pivots around the Grand National Security Policy and Defence Strategy. Since the advent of nuclear weapons, states possessing the nuclear weapons capability usually premise their national defence strategy on the notion of deterrence. Nuclear weapons do not serve the purpose of war fighting weapons but rather have political utility. Although, nuclear policy, nuclear doctrine and nuclear posture are often used in synonymous terms as these have very fine differences however. The strategy of deterrence, which has taken the pivotal role in defining the national defence policy, has following key components:

- **Nuclear Policy:** At state level, policy is usually defined as broad contours of a deliberated and well thought out course of action involving effective utilization of all conceivable facets (political, diplomatic, military, economic and academic etc.) resultantly contributing towards the national purpose or objective. Nuclear policy entails principles about how to employ the nuclear capabilities to achieve the Grand National Purpose or state's objective which may range from using it for peaceful purposes or to developing nuclear warheads and considering their possible employment.<sup>18</sup> Nuclear policy components could therefore include generation of nuclear power, using nuclear technology in the fields of research, medicine and agriculture, manufacturing the nuclear weapons, using these for defence and deterrence,

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<sup>17</sup>John J. Mearsheimer, "Reckless States and Realism", *International Relations*, Vol. 23, No. 2, 2009, pp. 241-243.

<sup>18</sup>Charles D. Ferguson, William J. Perry and Brent Scowcroft, "U.S. Nuclear Weapons Policy", *Council on Foreign Relations*, Independent Task Force Report No. 62, 2009, xiv-xvi, 7-8, 14-21.

- contemplating their employment in situations which threaten territorial integrity and sovereignty, adopting measures to prevent nuclear proliferation, ensuring safety and security of nuclear installations and materials etc. In case of India and Pakistan, both the South Asian nuclear rivals have premised their nuclear weapons policy on the notion of credible minimum deterrence, aiming at maintaining a minimal capability of inflicting an unacceptable damage over the adversary. However, in recent times Indian exponential growth in the stocks of fissile materials illustrates that India is gradually moving away from minimum deterrence to a policy of Assured Destruction.<sup>19</sup> During the Cold War, the US and USSR also founded their nuclear policies on the principle of an Assured Destruction capability. Nuclear policy also identifies that whether a state envisages use of nuclear weapons for retaliation only or striking first.
- **Nuclear Doctrine:** Doctrines are promulgated theoretical guidelines for employment of a capability or ideology which may be theological, political, military or strategic.<sup>20</sup> Nuclear doctrine consequently provides guidelines with regards to deployment, employment and circumstances necessitating the possible use of nuclear forces. Main purpose of nuclear doctrine is to influence adversary's perceptions and deter it by demonstrating the will to use nuclear weapons under certain given circumstances. It may also be aimed at reassuring the allies and extending over them a protection of nuclear umbrella against a collective opponent.<sup>21</sup> A nuclear doctrine could exist on a written paper, as has been the case in India and United States, or could be embedded within the statements of political or military leaders as has been seen in case of Pakistan. Nuclear doctrines also decide on the occasions and patterns when states might contemplate the use of nuclear forces, i.e. either massively or for limited strike.<sup>22</sup>

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<sup>19</sup>Baqir Sajjad Syed, "Broadest deterrence capability to be kept", *Dawn*, September 10, 2015, <http://www.dawn.com/news/1206051>

<sup>20</sup>Zafar Cheema, *Indian Nuclear Deterrence*, pp. 316-317.

<sup>21</sup>*Ibid*, p. 318.

<sup>22</sup>For a detailed and interesting discussion on nuclear doctrines in South Asia please see: Scott D. Sagan, "The Evolution of Pakistani and Indian Nuclear Doctrine", in



- Pakistan's nuclear doctrine, for example, is India centric and premised on 'first use but as a last resort'. While Indian nuclear doctrine, on the other hand, promises a conditional 'no-first use'<sup>23</sup> and massive retaliation.<sup>24</sup> However, nuclear doctrines just provide underlying principles formulated during peace to serve the purpose of deterrence and therefore may or may not be followed during war.<sup>25</sup>
- **Nuclear Strategy:** Strategy implies employment of all available means and capabilities in a deliberated plan towards an identified goal or policy while military strategy essentially involves planning and directing military operations for fighting wars without actually going to war. War itself is tactical but its consequences fall in the domain of strategy.<sup>26</sup> Although nuclear weapons are essentially for deterrence and not for war fighting, yet nuclear war fighting plans paradoxically become essential and critical part of the nuclear strategy, which primarily are aimed at preventing the nuclear war rather than fighting it. Nuclear Strategy therefore encompasses maintaining and deployment of available nuclear forces, according to multiple contingencies, to demonstrate the will and intent of using the nuclear capability with a purpose of deterring the adversary from committing aggression or dissuade her from adopting a course of action constituting a grave national

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*Inside Nuclear South Asia* (ed.), Scott D. Sagan, (New Delhi: Cambridge University Press India Pvt. Ltd., 2011), pp. 222-254.

<sup>23</sup>Shams uz Zaman, "Myth of Indian 'nuclear no first use'", *Nation*, December 22, 2012, p. 7.

<sup>24</sup>Ali Ahmed, "India, Nuclear Weapons and 'Massive Retaliation': The Impossibility of Limitation", *Institute of Peace and Conflict Studies*, IPCS Debate # 4135, October 8, 2013, <http://www.ipcs.org/article/india/ipcs-debate-india-nuclear-weapons-and-massive-retaliation-the-impossibility-4135.html>

<sup>25</sup>Bharat Karnad for example has cited that during the 2001 escalation, Indian government had postured for a pre-emptive nuclear strike. Likewise, Herman Kahn stated that, "No first use' stops just where war begins". For details see: Bharat Karnad, *India's Nuclear Policy* (Connecticut: Praeger Security International, 2008), pp. 110-111. Also: Naeem Salik, *Genesis of South Asian Nuclear Deterrence* (Karachi: Oxford University Press, 2010), pp. 226-229.

<sup>26</sup>Colin S Gray, *Modern Strategy* (New York: Oxford University Press, 1999), pp. 17-19.

- threat to the defender.<sup>27</sup> Nuclear strategy tends to be highly classified including nuclear targeting plans, nuclear warhead sizes, delivery means (both for counter value and counter force warheads), forces to be armed with nuclear weapons and the battle locations of these weapons etc.
- **Nuclear Posture:** Nuclear posture is the state of readiness of one's nuclear forces in terms of readiness, launch and strike. The less the time involved in the launch of a nuclear strike, the more is the readiness of the state of launch and consequently more offensive is the nuclear posture of a state. Despite the lack of consensus on the states' intent to acquire nuclear weapons,<sup>28</sup> these fundamentally serve the purpose of deterrence and self-defence.<sup>29</sup> While some states and organizations have adopted pre-emptive nuclear doctrines,<sup>30</sup> these have primarily been justified under the logic of self-defence posture in a quest to deter the adversary from making preparations to strike first.<sup>31</sup> Mainly there exist three broad nuclear postures, the first, 'Launch on Warning' (LoW) is the highest form of readiness in which nuclear weapons are kept at hair trigger alert to be fired on the warning of a possible nuclear attack. The second posture of 'Retaliatory Launch Only After Detonation' (RLOAD), also known as Launch Under Attack, involves retaliating only after

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<sup>27</sup>Shams uz Zaman, "Stockpiling nuclear weapons", *Nation*, June 29, 2013, p. 6.

<sup>28</sup>Scott D. Sagan, "Why Do States Build Nuclear Weapons?: Three Models in Search of a Bomb", *International Security*, Vol. 21, No. 3, (Winter, 1996-1997), pp. 54-55.

<sup>29</sup>Sagan, "Evolution of Pakistani and Indian Nuclear Doctrine", in *Inside Nuclear South Asia* (ed.), pp. 244. See also: Haider Nizamani, "Defence or deterrence?", *Dawn.com*, May 13, 2009, <http://www.dawn.com/news/464042/defence-or-deterrence>

<sup>30</sup>Walter Pincus, "Pentagon Revises Nuclear Strike Plan", *The Washington Post*, September 11, 2005, <http://www.washingtonpost.com/wp-dyn/content/article/2005/09/10/AR2005091001053.html>

<sup>31</sup>Ian Traynor, "Pre-emptive nuclear strike a key option, Nato told", *The Guardian*, January 22, 2008, <http://www.theguardian.com/world/2008/jan/22/nato.nuclear>

- detonation of the adversary's nuclear weapons has actually taken place.<sup>32</sup> Finally, in the Launch on Order posture, nuclear weapons are kept in ready state to be launched on authorization regardless of an impending nuclear attack or warning.<sup>33</sup> Nuclear posture is also established by the type of nuclear command and control system followed in a state. Pakistan and India both have developed an assertive nuclear command and control mechanism, which implies that the decision to use nuclear weapons rests with the highest decision making body in the central or federal government. Pakistan is known to have kept the nuclear weapons in very low alert levels and not in ready to fire state.<sup>34</sup> Pakistan has also introduced a two men rule with regards to nuclear codes and three men rule for authentication before launching the nuclear weapons, if ever such stage is reached.<sup>35</sup> In past India was also known to have been following a similar policy which has now been changed. India is known to have kept some portion of its nuclear armed missiles in alerted and ready to fire state.<sup>36</sup>
- **Nuclear Force Structure:** In deterrence strategy, the nuclear force structure is developed according to the perceived threat perceptions. Nuclear force structure must be dynamic enough to cater for the unprecedented eventualities and threats which a state may envisage in future extreme circumstances as well. Nuclear force structure is primarily the state's capability to respond with the nuclear weapons once the nuclear threshold is crossed by an adversary.

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<sup>32</sup> Alan Philips and Steven Starr, "Change Launch on Warning Policy", *Center for Arms Control, Energy and Environmental Studies, Moscow*, Opinion, April 5, 2006, <http://www.armscontrol.ru/pubs/en/change-low.pdf>

<sup>33</sup> Bruno Tertrais, "Pakistan's Nuclear and WMD Programmes: Status, Evolution and Risks," *SIPRI.ORG, EU Non-Proliferation Consortium*, Non-Proliferation Papers, No. 19, July 2012, pp. 5, <http://www.sipri.org/research/disarmament/eu-consortium/publications/Nonproliferation-paper-19>

<sup>34</sup> Ibid.

<sup>35</sup> Tertrais, "Pakistan's Nuclear and WMD Programmes", *sipri.org*, p. 14.

<sup>36</sup> Vipin Narang, "Five Myth's about India's Nuclear Posture", *The Washington Quarterly*, Vol. 36, Issue, 3, (2013), pp. 148-150.

A particular nuclear force structure is adopted according to the state's nuclear doctrine and strategy.<sup>37</sup> Different nuclear force structures are needed for counter value and counter force targeting and would also vary according to the nature of the threat perceived from different nuclear rivals.<sup>38</sup> Nuclear forces in principle includes the stocks of available fissile material which could readily be utilized for manufacturing the fissile cores of nuclear warheads, the total number of operational warheads on the state's nuclear inventory, the available delivery means to include nuclear capable missiles (all types), aircrafts, bombers, submarines and other naval platforms etc.<sup>39</sup> Both India and Pakistan maintain missiles as primary and aircraft as secondary delivery means for nuclear weapons. India is also developing an assured 2<sup>nd</sup> strike nuclear capability through naval platforms while Pakistan has also established a Naval Strategic Force Command for this purpose.<sup>40</sup>

- **Nuclear Thresholds:** Also known as nuclear redlines or unacceptable limits which if transgressed by an adversary, risks invoking nuclear retaliation. Nuclear thresholds are always kept vague and ambiguous. If these are too obvious, an adversary could either get encouraged to initiate a conflict short of crossing these redlines or launch a pre-emptive nuclear strike when it anticipates crossing these thresholds and an evident nuclear redline would bereave the defender of its flexibility and options.<sup>41</sup> Likewise if nuclear thresholds are kept too high it would call for an

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<sup>37</sup>Gurmeet Kanwal, "India's Nuclear Force Structure", *Strategic Analysis*, Vol. XXIV, No. 6, September 2000, <http://www.idsa-india.org/an-sept2-00.html>

<sup>38</sup>Erik Gartzke, Jeffery M. Kaplow and Rupal N. Mehta, "The Determinants of Nuclear Force Structure", *Journal of Conflict Resolution*, Vol. 58, No. 3, pp. 484-492.

<sup>39</sup>U.S. Department of Defence, "Fact Sheet on U.S. Nuclear Force Structure under the New START Treaty", unclassified and undated, <http://www.defense.gov/documents/Fact-Sheet-on-US-Nuclear-Force-Structure-under-the-New-START-Treaty.pdf>

<sup>40</sup>Feroz H. Khan and Mansoor Ahmed, "Pakistan, MIRVs, and Counterforce Targeting", in Michael Krepon, Travis Wheeler and Shane Mason, ed., *The Lure & Pitfalls of MIRVs* (Washington: Stimson Center, May 2016), p. 156.

<sup>41</sup>Sagan, "Evolution of Pakistani and Indian Nuclear Doctrine", in *Inside Nuclear South Asia* (ed.), p. 228.

unwarranted brinkmanship whilst too low redlines could encourage the adversary to adopt a posture of pre-emptive or decapitating strikes. While some Pakistani officials have declared few vague spatial, military, economic and political thresholds, Indian thresholds are relatively clearer which even includes retaliating to nuclear, chemical and biological attacks and any perceived nuclear threat thereof.<sup>42</sup>

### Proportionality and Rationality in South Asian Deterrence

A complex problem in the deterrence equation in South Asia arises from the doctrinal mismatch. While Indian no first use clause is conditional and dubious, retaliating massively to one odd Pakistani Low Yield Short Range (LYSR) nuclear warhead, possibly on Indian mechanized forces in Pakistani territory, would be disproportionate and imprudent.<sup>43</sup> Such complications in the deterrence equation have thus become extremely problematic due to inherent risk of serious miscalculations. Because nuclear weapons are not meant for war fighting but for deterrence, therefore employing, only one, even against an aggressor is likely to be regarded as an act of insanity and irrationality by the international community. There are no guarantees that in retaliation to such a strike the response would be proportional and not massive. There are no clear answers as to whether India will respond to a LYSR Pakistani tactical nuclear strike massively or proportionately? And do Pakistan and India have same understanding of the term proportional?<sup>44</sup> Would both states

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<sup>42</sup>Peter Levoy, "Islamabad's Nuclear Posture: Its Premises and Implementation" in Henry D. Sokolski (ed.), *Pakistan's Nuclear Future: Worries Beyond War*, (Carlisle Barracks, PA, Strategic Studies Institute, 2008), pp. 136.

<sup>43</sup>Raja Menon, "A mismatch of nuclear doctrines", *The Hindu*, January 22, 2014, <http://www.thehindu.com/opinion/op-ed/a-mismatch-of-nuclear-doctrines/article5602609.ece>

<sup>44</sup>For detailed discussion on the issue see: Bhumitra Chakma, *Pakistan's Nuclear Weapons* (New York: Routledge, 2009), pp. 55-56. Also: Michael Krepon, "Massive Retaliation", *Arms Control Wonk*, April 1, 2014, <http://krepon.armscontrolwonk.com/archive/4099/massive-retaliation-2> Also: Abhijit Iyer Mitra, "Massive Retaliation", *South Asian Voices*, April 16, 2014, <http://southasianvoices.org/massive-retaliation/>

slip towards fighting a nuclear war in an action reaction syndrome? India also has developed LYSR nuclear weapons besides subscribing to fighting a conventional war after a nuclear strike,<sup>45</sup> yet it has not officially distanced itself from the massive retaliation condition even after a sub-kilo ton nuclear strike, despite the fact that few Indian academics have termed this posture as irrational.<sup>46</sup>

### Deterrence from Minimal to Assured Destruction

The concept of minimum deterrence or minimal deterrence is premised on the notion of possessing minimum numbers of warheads considered essential to inflict level of damage deemed unacceptable even in return for a victory.<sup>47</sup> States aiming to maintain a posture of minimal deterrence are highly unlikely to increase the number of nuclear warheads beyond the numbers considered imperative for inflicting unacceptable damage. On the contrary, the concept of assured destruction is founded on the notion of conducting a massive strike in a manner which ensures that the victim state cease to exist as a viable entity. Assured destruction is a more dynamic concept depending on multiple factors including the adversary's geographical size, industrial and population centres, its nuclear strike forces and posture and defensive mechanism against nuclear attack like BMD shield and protective shelters etc. Indian deterrence posture is gradually shifting from credible minimum to assured destruction,<sup>48</sup> which has prompted Pakistan to increase the

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<sup>45</sup>Zahir Kazmi, "SRBMs Deterrence and Regional Stability in South Asia: A Case Study of Nasr and Prahaar", *Regional Studies*, Institute of Regional Studies (IRS), Vol. XXX, No. 4, (Autumn 2012). Also: Bharat Karnad, *Nuclear Weapons and Indian Security* (New Delhi: Macmillan India, Ltd, 2006), pp. 670-676.

<sup>46</sup>Raja Menon, "A mismatch of nuclear doctrines", *The Hindu*, January 22, 2014.

<sup>47</sup>Norman C. Freund, "Nuclear Deterrence: The Rationality of Irrational", *International Journal on World Peace*, Vol. 4, No. 3, (Jul – Sep 1987), p. 75. See also: Chakma, *Pakistan's Nuclear Weapons*, pp. 48-50.

<sup>48</sup>Michael Krepon, "Whatever Happened to Minimum Credible Deterrence?", *Arms Control Wonk*, January 6, 2014,

<http://krepon.armscontrolwonk.com/archive/3996/what-ever-happened-to-minimum-credible-deterrence> See also: Amit R. Saksena, "The Paradox of India's 'Credible Minimum Deterrence'", *The Diplomat*, August 6, 2014, <http://thediplomat.com/2014/08/the-paradox-of-indias-credible-minimum-deterrence/>

number of warheads, thus denying psychological advantage to India. This may also prompt Pakistan to adopt an Assured Destruction policy that will ultimately initiate another arms race in the region.

### **The Issue of Credibility**

Credibility in nuclear deterrence is dependent on numerous factors like geographical size, nuclear strike capabilities of the adversary, other rivals within and outside the region and Grand National Policy etc. As a yardstick, to effectively deter another nuclear rival, a mix of nuclear warheads for counterforce and counter value targeting would be needed. The yield of these warheads would also depend on multiple factors like for example possessing 2 – 3 warheads of 10 KT against a counter-value target, could at times be more effective form of deterrence instead of a megaton warhead. However in principle, the deterrent value of thermonuclear weapons is considered to be far more potent and effective than the fission based warheads.<sup>49</sup>

It is not clear how much number of nuclear warheads would be deemed by India and Pakistan as essential for credibility. There is no measurable yardstick which could ascertain the destruction level as unacceptable for either of the adversaries. Some western scholars like McGeorge Bundy believed that even a modest nuclear inventory totalling up to the yield of one Hydrogen Bomb (approximately 50 Kilo Ton [KT] or above),<sup>50</sup> would serve the purpose and a nuclear force comprising of approximately 500 KT yield would be more than enough as its use must be termed as “a disaster beyond history”.<sup>51</sup> Yet there are others, like Robert McNamara, who held different views

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<sup>49</sup>Kurt Guthe, “Nuclear Weapons Acquisition and Deterrence”, in *Understanding Deterrence* (ed.), Keith B. Payne (New York: Routledge, 2013), pp. 109-112.

<sup>50</sup>Carey Sublette, Sub Section 4.4 “Elements of Thermonuclear Weapon Design”, of Section 4.0 Engineering and Design of Nuclear Weapons, in Nuclear Weapons Freely Asked Questions (NWFAQ), *Nuclear Weapons Archive – A Guide to Nuclear Weapons*, <http://www.nuclearweaponarchive.org/Nwfaq/Nfaq4-4.html#Nfaq4.4>

<sup>51</sup>McGeorge Bundy, “To Cap the Volcano”, *Foreign Affairs*, Vol. 48, No. 1, October 1969, <http://www.foreignaffairs.com/articles/24098/mcgeorge-bundy/to-cap-the-volcano>

on this issue and considered a nuclear force of no less than 200 to 300 Mega Tons (MT) as an effective deterrence against an adversary like USSR.<sup>52</sup>

However, the yardstick for maintaining effective deterrence would be different against smaller and bigger states. To deter a small state, it is assumed that, nuclear weapons of different sizes equalling to 1 MT would be sufficient, while a force comprising of nuclear warheads totalling up to 4 MT should be able to deter a bigger state.<sup>53</sup> The effectiveness of deterrent would be different in case of India and Pakistan due to their size and geography. According to Robert McNamara, a force which could cause destruction of one-fifth to one fourth (20% - 25%) of the total population and half of the industry would deter an adversary by inflicting a blow of an assured destruction.<sup>54</sup> McNamara's estimates although didn't include the counter-force targets. Thus taking 'assured destruction capability' as a yardstick for maintaining the minimum credibility of deterrence, it can be argued that in the South Asian context, a total of 1 MT (i.e., 100 warheads of 10 KT each or 50 warheads of 20 KT each) would constitute as a minimum deterrence and might only suffice in extremely low risk situations. For larger states or high risk situations, the minimum deterrence could possibly be established by maintaining an arsenal of nuclear weapons combining up to a total yield of approximate 4 MT (as a rough estimate this could mean 400 x 10 KT or 200 x 20 KT warheads).<sup>55</sup>

However, in the South Asian context, India has started to develop BMD capabilities which could undermine the deterrent value of nuclear weapons for Pakistan. Therefore, the concept of minimal deterrence originally conceived almost two decades ago may become redundant due to credibility issues. Thus if India deploys a BMD shield and radically increases its number of nuclear warheads, for Pakistan a

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<sup>52</sup>General K. Sundarji, *Blind men of Hindustan* (New Delhi: UBS Publishers' Distributors Ltd, 1995), pp. 66-67.

<sup>53</sup>Ibid, p. 67.

<sup>54</sup>Ibid, p. 66.

<sup>55</sup>Ibid, p 67.



credible minimum deterrence would entail strategic warheads (for counter-force and counter-value targets), MIRVs (Multiple Independently targetable Re-entry Vehicle) mounted on missiles to neutralize BMD and an assured second strike capability to restore the concept of mutual vulnerability ensuing stability. Under such high risk environments to deter a larger rival a smaller nuclear weapon state may need an inventory totalling up to 8 - 10 MT.

**Command and Control Systems:** Command is usually referred to as assigning of tasks and missions to the subordinate forces while control implies “monitoring and laying down certain constraints on their functioning through doctrine, standard operating procedures, software and equipment.”<sup>56</sup> A robust command and control system is built with purpose to withstand a decapitating or nuclear first strike which thus enhances the deterrent value.<sup>57</sup> The deterrent forces would be credible only if the adversary believes that a nuclear pre-emptive or first strike would still fail to completely eliminate the retaliatory nuclear forces, and sufficient quantity would still be available to strike back and inflict unacceptable damage. A decapitating nuclear strike, which according to some analysts is a distinct possibility in South Asia,<sup>58</sup> is usually aimed at severing the communications between commanders and the deployed locations of the weapons, eliminating the central leadership possessing authorization for nuclear strike and destroying the deployed nuclear weapons before these could be launched.<sup>59</sup>

To counter this danger it would be essential to build a multi-layered communication network, well dispersed weapon deployment locations, adequate survivable nuclear forces and protective nuclear shelters for the commanders and leadership which have to authorize the nuclear strike. Nuclear command could be based on assertive, also known as central/positive control model, or delegative, also known as

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<sup>56</sup> Lt. Gen Pran Pahwa, *Command and Control of Indian Nuclear Forces* (New Delhi: Knowledge World, 2002), p. 4.

<sup>57</sup> Ibid, p. 5.

<sup>58</sup> Brigadier Nair, *Nuclear India*, pp. 54, 86.

<sup>59</sup> Gen Pran Pahwa, *Command and Control of Indian Nuclear Forces*, p. 9.

negative control model. In central command model the vulnerability of the nuclear forces and commanders become obvious with an inherent risk of 'use these or lose these', while in delegative command model there are higher risks of accidental or unauthorized use. Therefore, to cater for such problems Pakistan has introduced different kinds of Permissive Action Links (PALs) and fail-safe mechanisms. PALs usually are cryptographic single or divided codes distributed among several operators to prevent unauthorized launch whereas fail-safe is a mechanism or a device which is triggered in case of a failure and thus causes the nuclear device to fail in a manner that it is considered safe.<sup>60</sup> Although not enough information is available on Indian nuclear command and control structure, nuclear weapons are under safe custody despite concerns raised in the west from time to time.

### **Strengthening Deterrence or Regional Arms Race?**

Keeping deterrence stable without indulging into an arms race is an extremely challenging task. This may require some policy, doctrinal, strategic, force postural and structural obligations to serve as an effective mechanism towards preventing war. Pakistan, being the smaller state, would have to have a nuclear force and command structure quantified in proportionality to the size of Indian nuclear forces, military doctrines and Anti-ballistic Missile (ABM) capabilities. Since the overt nuclearization of South Asia, Indian military has introduced the concept of limited war under the nuclear umbrella, known as "Cold Start Doctrine (CSD)", which is likely to be put to test if the nuclear asymmetries grow beyond proportion between India

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<sup>60</sup>For more details on PALs and Fail-Safe, please see: *Columbia University*, "Permissive Action Links", updated September 2, 2009, <https://www.cs.columbia.edu/~smb/nsam-160/pal.html> and: *MrReid.org*, "What Does "Fail-Safe" Mean?", November 20, 2014, <http://wordpress.mrreid.org/2014/11/20/what-does-fail-safe-mean/>. Also: Stephen Shenfield, "Nuclear command and control: from fail-safe to fail-deadly." Review of *The Command and Control of Nuclear Forces* by Paul J. Bracken (Connecticut: Yale University Press, 1985), *stephenshenfield.net*, May 5, 2012, <http://stephenshenfield.net/themes/war-and-disarmament/nuclear-weapons/114-nuclear-command-and-control-from-fail-safe-to-fail-deadly>

and Pakistan.<sup>61</sup> A nuclear triad of several hundred warheads along with a rudimentary BMD capability would presumably give India a false sense of superiority thus prompting aggression.<sup>62</sup> In retrospect, a limited conflict between the two countries is likely to become more plausible with high possibility of spinning into a full scale war. Pakistan therefore, would be obliged to have a sizable nuclear inventory to pose a credible threat to Indian aggressive designs.

Deterrence is not simply about the number of nuclear warheads. The credibility of deterrence also rests upon a demonstrated capability, the delivery means and a communication of will to use the capability. In South Asia, the nuclear rivals have adopted various measures to strengthen the deterrence both in psychological and physical dimensions.<sup>63</sup> Some of these steps not only pose risk for nuclear arms race, but have also altered the deterrence equation in the region, thus perpetuating regional instability. Some of the latest developments in shifting nature of deterrence in South Asia include:

- **A Quest for Superior Nuclear Forces:** India desires to maintain the superiority of nuclear forces by enlarging the size of nuclear inventory, maintaining a nuclear arsenal having a mix of tactical, mid-range and thermonuclear warheads, planning to mount MIRVs on the missiles along with a nuclear war fighting strategy.<sup>64</sup> Deployment of MIRVs would have an extremely destabilizing impact and would entail entering into a nuclear and missile arms race.<sup>65</sup> Scholars have observed that Indian quest to develop ICBMs, MIRVs on these and deployment of BMD shield could seriously undermine the nuclear deterrence in South Asia besides

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<sup>61</sup>Walter C. Ladwig III, "A Cold Start for Hot Wars?", *International Security*, Vol. 32, No. 3, (Winter 2007/08), pp. 158-159.

<sup>62</sup>Zaman, "Undermining S. Asian Nuke Deterrence – II", *Pakistan Observer*, 2012.

<sup>63</sup>Karnad, *India's Nuclear Policy*, p. 90. See also: Brigadier Vijai K. Nair, *Nuclear India* (New Delhi: Lancer International, 1992), p. 97.

<sup>64</sup>Shams uz Zaman, "The Missile Race in South Asia", *Counterpunch*, May 29, 2015, <http://www.counterpunch.org/2015/05/29/the-missile-race-in-south-asia/>

<sup>65</sup>Hubert H. Humphrey, "II. An End to Nuclear Gamesmanship", *Bulletin of Atomic Scientists*, Vol. XXVIII, No. 3, March 1972, p. 14.

risking a nuclear arms race.<sup>66</sup> For Pakistan to follow such course would be financially unfeasible and prohibitive in foreseeable future. Pakistan on the other hand maintains a deterrence posture premised on the principle of minimalism. The path to maintain and ensure nuclear superiority over an adversary is nevertheless a slippery slope which could affect perceptions of other states in the region thus leading to a strategic arms race.<sup>67</sup> Owing to these Indian developments, risk of nuclear arms race in South Asia remains fairly high.

- **Maintaining Nuclear Triad:** India aims at developing a nuclear triad thus acquiring the capability to deliver nuclear warheads using multiple platforms (like ground based missiles, aircraft and naval submarines). The purpose is to acquire a capability of conducting a nuclear strike in retaliation to nuclear first strike. Such a capability can give India a false sense of security that may lead them towards undermining the credibility of Pakistan's nuclear deterrent. For example Bharat Karnad argued that Pakistani nuclear threat is serious but not credible because an unacceptable cost of the Indian retaliatory strike would self-deter Pakistan from crossing the nuclear Rubicon.<sup>68</sup> Implying that India can afford to lose a few cities but as a consequence of a retaliatory strike, Pakistan would cease to exist as a viable state. Karnad and others conservatives believe that, Pakistani leadership, after anticipating the unacceptable level of damage, fear and caution would prevent them from considering the employment of nuclear weapons as a last resort. Such defective assumptions on part of Indian military planners would encourage

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<sup>66</sup>Zachary Keck, "Asia's Coming Nuclear Arms Race", *The Diplomat*, June 18, 2014, <http://thediplomat.com/2014/06/asias-coming-nuclear-arms-race/> See also: Shams uz Zaman, "Say no to nuclear arms race", *Nation*, October 25, 2013, p. 7.

<sup>67</sup>Jonathan Samuel Lockwood, *The Soviet view of U.S. Strategic Doctrine: Implications for Decision Making* (New York: National Strategy Information Center, Inc, 1985), pp. 127-129.

<sup>68</sup>Karnad, *India's Nuclear Policy*, pp. 96, 113. See also: Jonas Schneider, "A Nuclear Deal for Pakistan?", *Center for Security Studies (CSS) Analyses*, No. 187, March 2016, p. 3, <http://www.css.ethz.ch/content/dam/ethz/special-interest/gess/cis/center-for-securities-studies/pdfs/CSSAnalyse-187-EN.pdf>

them to consider the option of waging limited war against Pakistan. As a consequence of such thinking, Pakistan is feeling obliged to proportionally increase the size of its nuclear arsenal as a necessity rather than choice.

- Assured Second Strike Capability:** India is on a path of acquiring an assured second strike nuclear capability through a large size nuclear inventory along with multiple delivery means including SSBNs and advanced nuclear and missiles capabilities citing threat from China and Pakistan as a pretext.<sup>69</sup> An assured second strike entails striking back with nuclear weapons after absorbing the nuclear first strike or a retaliatory nuclear strike which can be attained through dispersion of nuclear forces, maintaining a retaliatory capability at sea based platforms (both floating and submerged) and deploying silo based nuclear missiles in hardened concrete structures. The problem with the naval vessels (submerged or floating) is that nuclear weapons deployed on these platforms have to be kept in ready to fire state at the sole discretion of the submarine/local commanders.<sup>70</sup> This delegative command model is thus riskier, unstable and provocative risking unauthorized use of nuclear weapons. Such a deployment could push other states to place their weapons on hair-trigger alert thus adding to the risk of miscalculation and accidental use of nuclear weapons, leading to instability. Indian SSBNs would by design have a delegative nuclear command structure. A second strike capability coupled with deploy BMD shield, even at a rudimentary stage, would ostensibly provide India with a false sense of security thus resulting in erroneous perceptions of achieving a decisive nuclear superiority vis-à-vis Pakistan.<sup>71</sup> As a consequence

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<sup>69</sup>Saira Bano, "Assessing India's Nuclear Capabilities", *International Policy Digest*, December 22, 2014, <http://intpolicydigest.org/2014/12/22/assessing-india-s-nuclear-capabilities/>

<sup>70</sup>Peter Reydt, "Britain: No Central control over nuclear arsenal", *World Socialist Web Site (WSWS)*, November 27, 2007, <http://www.wsws.org/en/articles/2007/11/nucl-n24.html>

<sup>71</sup>James Dao, "The Nation; Please Do Not Disturb Us With Bombs", *The New York Times*, February 11, 2001, <http://www.nytimes.com/2001/02/11/weekinreview/the-nation-please-do-not-disturb-us-with-bombs.html>

Pakistan would be compelled to take appropriate measures thus possibly triggering an arms race.

- **Full Spectrum Deterrence:** Due to Indian belief of fighting a limited war under the nuclear umbrella, through their proactive CSD, Pakistan has tried to plug the existing space by adopting “full spectrum” deterrence after inducting LYSR nuclear capable missiles. However, implications of counter-force weapons are disputed by scholars. Some have attributed that these have a stabilizing effect,<sup>72</sup> while others regard these as de-stabilizers for the strategic environment.<sup>73</sup> Regardless of the effects, these weapons still remain for deterrence purpose and not nuclear war fighting. This is evident from the fact that NATO, the and even Russia still maintains both types of nuclear weapons, tactical and strategic, on their inventories which only reflects the importance of these weapons in deterrence equation.
- **Ambiguous Nuclear Thresholds:** Definitely laid out geographical redlines or clearly elucidated nuclear thresholds can motivate an adversary to take calculated risks or an endeavour to conduct limited war below the proclaimed nuclear thresholds especially in a troubled region. Unfortunately future course of battles can never be predicted precisely which consequently could lead to unintended and dangerous consequences. Therefore, keeping the nuclear thresholds vague mostly helps in discouraging the opponent from undertaking calculated risk while struggling to precisely identify the actual circumstances which could compel the enemy to launch the nuclear strike.<sup>74</sup> Pakistan's ambiguous nuclear thresholds have helped in deterring India from launching an aggression which is expected to be the case in future as well.

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<sup>72</sup>Mansoor Ahmed, “Why Pakistan needs tactical nuclear weapons?”, *Weekly Pulse*, May 6, 2011, <http://www.weeklypulse.org/details.aspx?contentID=563&storylist=9>

<sup>73</sup>William C. Potter, “Next Step in Nuclear Disarmament: The Challenge of Tactical Nuclear Weapons”, *James Martin Center for Non-Proliferation Studies (CNS)*, paper prepared for seminar on nuclear disarmament at Kyoto Japan, December 2-5, 1996, available at: [http://cns.miiis.edu/reports/pot\\_japn.htm](http://cns.miiis.edu/reports/pot_japn.htm)

<sup>74</sup>Happymon Jacob, “A precarious Indo-Pak nuclear balance”, *The Hindu*, January 30, 2012, <http://www.thehindu.com/opinion/lead/a-precarious-indopak-nuclear-balance/article2832290.ece>

- **Anti-Ballistic Missile Defence Shield:** Another radical but slightly ineffectual and expensive way to strengthen the nuclear deterrence is the deployment of the BMD shield that could block or limit the incoming missiles thus reducing the cost of destruction from unacceptable to acceptable levels. This option, however, is extremely costly and partially successful due to complex technical issues and effective counter measures available to evade the defensive shield.<sup>75</sup> Indian quest for the BMD would become prelude to a new nuclear arms race which apparently is brewing in South Asia thus becoming a highly destabilizing factor for the region and global stability as had been seen in during the Cold War era.<sup>76</sup>
- **Incompatible Nuclear Doctrines:** Nuclear doctrine promulgates the circumstances under which the nuclear capabilities would be employed. In South Asia after the induction of LYSR nuclear weapons, nuclear doctrines of India and Pakistan have become incompatible.<sup>77</sup> An ambiguous nuclear doctrine although adds to the deterrence value, especially for the weaker state,<sup>78</sup> but also holds risks for miscalculations. For example, in case of Pakistan, the LYSR nuclear warheads are now the 'last resort' defence option instead of strategic nuclear weapons. At the same time Indian massive retaliation to a sub-kilo ton device would be disproportionate and irrational. Indian nuclear doctrine also

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<sup>75</sup>Kingston Reif, "Does missile defense work?", *Bulletin of the Atomic Scientists*, February 8, 2013, <http://thebulletin.org/does-missile-defense-work>. See also: David Willman, "\$40-Billion Missile Defence System Proves Unreliable", *Los Angeles Times*, June 15, 2014, <http://www.latimes.com/nation/la-na-missile-defense-20140615-story.html#page=1>

<sup>76</sup>Igor Ivanov, "The Missile-Defense Mistake: Undermining Strategic Stability and the ABM Treaty", *Foreign Affairs*, Vol. 79, No. 5, September/October 2000, <http://www.foreignaffairs.com/articles/56428/igor-ivanov/the-missile-defense-mistake-undermining-strategic-stability-and->

<sup>77</sup>Menon, "A mismatch of nuclear doctrines", *The Hindu*, January 22, 2014.

<sup>78</sup>Rifaat Hussain, "Nuclear Doctrines in South Asia", *South Asian Strategic Stability Unit (SASSU)*, SASSU Research Report No. 4, December 2005, p. 12.

<sup>79</sup>Col G. G. Pamidi, *Possibility of Nuclear War in Asia: An Indian Perspective* (New Delhi: Vij Books India Pvt Ltd, 2012), pp. 99-102.



mentions a dubious no first use clause which actually has become meaningless due to conditions attached to it.<sup>80</sup>

- **Nuclear Postures:** Pakistan maintains a defensive nuclear posture keeping the option of striking first if there be a grave threat to its national security or existence. This posture helps in deterring an adversary from initiating hostilities or showing nuclear brinkmanship. The posture of striking first as a last resort must not be confused with an offensive nuclear posture which is fundamentally different from an offensive posture involving nuclear readiness, force structures and deployment patterns.<sup>81</sup> India also maintains a similar kind of posture with more readiness for pre-emptive or retaliatory strikes.
- **Nuclear War Fighting Strategy:** Development of LYSR weapons by India and Pakistan, coupled with exercises conducted by India for nuclear warfare indicates the changing mood in South Asia. Although, to strengthen deterrence it becomes imperative for states to devise nuclear war fighting strategy; it paradoxically contradicts the basic purpose of nuclear weapons that these are not weapons of war but weapons of peace serving only political purpose of deterring war.<sup>82</sup> In wake of the LYSR nuclear capable missiles and nuclear war fighting exercises many scholars fear that the risks of nuclear war breaking out in South Asia are increasing.
- **Calculated Irrationality:** States are considered rational actors in global arena which formulate their policies on the cost-benefit calculus. The rationality-irrationality paradox has also a critical value in establishing the credibility of deterrence. War is considered as irrational and states, being rational, are expected to

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<sup>80</sup>Like for example Indian 'No First Use' is neither applicable to states which have nuclear weapons or are allies of the nuclear weapon states. For example see: Shams uz Zaman, "Myth of Indian 'nuclear no first use'", *The Nation*, December 22, 2012, p. 7.

<sup>81</sup>Hans M. Kristensen and Matthew McKinzie, "De-alerting nuclear forces", *Bulletin of the Atomic Scientists*, June 19, 2013, <http://thebulletin.org/de-alerting-nuclear-forces>

<sup>82</sup>Eli Jacobs, "Warfighting vs. Deterrence: A False Distinction", *Center for Strategic & International Studies (CSIS)*, September 12, 2011, <http://csis.org/blog/warfighting-vs-deterrence-false-distinction>



avoid it. Likewise unleashing the destructive power of the nuclear weapons is equally irrational. Therefore, once a state threatens to initiate war, the defender tends to prevent it either by displaying the will to employ nuclear weapons which thus constitutes a calculated level of irrationality.<sup>83</sup> However, such warnings risk encouraging the potential aggressor to launch pre-emptive strikes which could result in a nuclear exchange. Therefore, doctrines like Cold Start by India have increased the risks of nuclear war in South Asia.

### **Is the Deterrence Equation Stable in South Asia?**

After the nuclearization of South Asia, it became apparent that the scope for a conventional war no more existed. It was a setback for the huge Indian military machine which desperately sought relevance for their conventional role under the pretext of CSD. Conventional war between the nuclear rivals is an extremely dangerous proposition involving risk of miscalculations and accidents. By increasing its nuclear warheads, developing the BMD shield, mounting MIRVs on missiles and acquiring second strike capability, India is striving to tilt the power equilibrium profoundly in its favour. Commissioning of INS Arihant and testing a hypersonic interceptor missile, Ashwin, illustrates this dismal reality.<sup>84</sup> As a consequence strategic stability and deterrence equation is gradually eroding in South Asia and the scenario poses a serious national security threat for Pakistan. As a countermeasure, Pakistan has already restricted the space of limited war by adopting a posture of full spectrum deterrence. Acquiring a second strike capability remains an expensive

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<sup>83</sup>Freund, "Nuclear Deterrence: The Rationality of Irrational", pp. 75-77, 79. See also: Patrick M. Morgan, *Deterrence Now* (United Kingdom: Cambridge University Press, 2003), pp. 44-45, 54-58.

<sup>84</sup>Manu Pubby, "India's first nuclear submarine INS Arihant ready for operations, passes deep sea tests", *The Economic Times*, February 23, 2016, <http://economictimes.indiatimes.com/news/defence/indias-first-nuclear-submarine-ins-arihant-ready-for-operations-passes-deep-sea-tests/articleshow/51098650.cms>. See also: Hemant Kumar Rout, "India successfully test fires interceptor missile", *The New Indian Express*, May 15, 2016, <http://www.newindianexpress.com/states/odisha/India-successfully-test-fires-interceptor-missile/2016/05/15/article3434079.ece>.