PAKISTAN'S NUCLEAR DETERRENCE: Decade of Perceptions & Misperceptions

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Abstract

Pakistan that was once a de facto nuclear power became an overt nuclear state a decade ago. 28th May 1998; that marked a transition to a more credible state of nuclear deterrence apparently giving Pakistan a sense of security against more powerful India. Now Pakistan's resolve to maintain nuclear deterrence at all cost is aimed at offseting India's conventional superiority, and providing a last-ditch deterrent to Indian aggression in the event that conventional deterrence fails.The paper assesses the viability of the deterrence against the backdrop of on going modernization of Indian nuclear and missile programs. Attempt is also made to evaluate Pakistan's nuclear force today in order to assess as to what extent it is adequate in maintaining its level of "minimum nuclear deterrence" and how this adequacy might change in the future with the realization of Indo-US nuclear cooperation and provision of missile defense system to India.

Quest for Deterrence: Historical Perspective

A decade ago, i.e. in May 1998, India surprised the international community, challenging non-proliferation regime by triggering five nuclear bangs, creating global backlash and creating a new security dynamics in the region. The US after showing passive reaction and imposing unimpressive sanctions on India, led an international effort to pressurize Pakistan not to respond to Indian lead. Pakistan, that has been a victim of numerous Indian aggressions and blackmails since its inception including the dismemberment of East Pakistan, was in dire need of balancing the power tilted in favor of India to threat ratio since

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the unveiling of Smiling Buddha in 1974.[1] Disillusioned by alliances (SEATO, CENTO etc) to beef up its defense potential (in 1965 and 1971 wars), Pakistan was left with no option but to seek self-reliance through internal balancing of power and acquisition of nuclear deterrence. The events leading to a traumatic experience of dismemberment of Pakistan that dampened our national psyche clearly drove Pakistan to a conclusion that external forces could not be expected to provide extended deterrence in any future Indian invasion or nuclear intimidation.[2] On the other hand, Western countries including the U.S., despite Indian superiority in conventional weaponry vis-à-vis Pakistan, were widening the conventional gap and heightening the insecurity by selling weapons and equipment to India, and denying equal treatment to Pakistan. Having the fear of growing gap, concerns about the credibility of defense alliances, and telling impact of the sanctions imposed by the US and others, Pakistan's defense policy architects came to realize that the nuclear deterrent was the most cost effective way of guaranteeing the territorial integrity and political sovereignty of the country. Though Pakistan succeeded in enriching the uranium in 1987 and possessed "recessed deterrence" but maintained a policy of deliberate ambiguity, suggestive of the fact that Pakistan is capable of assembling nuclear weapons but did not have any operative nuclear weapons program.[3] Since then there were feelings that any move of nuclear coercion or serious threat to Pakistan security would have to face Pakistan's nuclear weapons potential with unbearable loss. In the words of George Perkovich the concept was described as the "non-weaponized deterrence" meaning thereby that both countries have the requisite components along with engineering expertise to assemble a nuclear weapon even at a short notice.[4] However, the first successful test of the Pakistan nuclear

deterrence was exercised by thwarting Indian plans of invasion under the guise of exercise Brass Tacks. Again, in 1990 Pakistan relied on deterrence to countervail the Indian ambitions against Pakistan. Above all, realizing the catastrophic consequences of the nuclear race, Pakistan went all out to see nuclear free South Asia by tabling different proposals including; a nuclear and missile- free zone, a bilateral nuclear test ban, signing of Nuclear Nonproliferation Treaty and adherence to the International Atomic Energy Agency safeguards[5] etc but with zero sum gain.[6] Having found all options doomed to failure, Pakistan regarded nuclear weapons as essential to gain balance of power and overcome its conventional inferiority and lack of strategic depth against India. Indian tests of May 1998, once again confronted Pakistan with serious threats to its survival and sovereignty. The US led international efforts offered Pakistan a lucrative economic and military package as compensation for restrain and threatened serious consequences for explosion following its old Carrot and Stick policy.[7] Pakistan, that has the national resolve to go nuclear for its national security, has no other choice but to respond to its security needs with honor and dignity. During the post nuclear test environment the nuclear restraint regime attempted to establish by the Lahore Declaration and the Memorandum of Understanding signed on February 21, 1999 was dashed to the ground by the Kargil conflict, when both India and Pakistan rhetorically displayed their nuclear teeth contrary to their previous commitment to construct a "vision of peace and prosperity" in South Asia.[8] Pakistan's nuclear capability once again proved vital to its survival and staved off Indian military aggression in 2001 – 2002.

Indian nuclear tests in May 1998 forced Pakistan to relinquish its ambiguous posture. After weighing the gravity of the emerging security

concerns, Pakistan refused to accept these packages, no matter how generous those were, and went nuclear to demonstrate its will to defend its national honor and sovereignty. Hence, it was the perceived threat, imbalanced conventional power equation, strategic concerns, domestic compulsions, hype of nationalism and international scenario that moved Pakistan to respond with nuclear tests and restore the strategic balance in the region. Apparently our quest for nuclear weapons began when Pakistan was still bleeding from the amputation of its Eastern half. It was presumed that nuclear weapons would rebuild Pakistan's strength, heal its wounds, buttress its pride, and ensure its security and sovereignty in a future war. Hence, the foremost motivation of Pakistan's nuclear march to Chaghi was its quest for security especially from Indian aggression. It was considered that nuclear weapons would equalize terror with terror (as guns can't be silenced by moral appeals) and effectively neutralize Indian superiority, and ensure peace and stability in the region.

Pakistan's Rationale for Going Nuclear

Nuclear bang of 28th May 1998 brought a new dimension in equalizing the balance of power in the conflict prone South Asia on the one hand and layers of economic and other sanctions on the other. Globally, these tests, caused shock and disappointment for those interested in the maintenance of nuclear nonproliferation and regionally, presented a deterrent to preserve peace, bring stability, and enhance restraint between India and Pakistan. To grasp the wholesome view of South Asian nuclear perspective one has to understand the motivating factors that led Pakistan to go nuclear. The factors that led Pakistan to give up existential deterrence, or non-weaponized or virtual deterrence in favor of minimal deterrence based on physical demonstration of that capability of nuclear weapons on 28th May 1998 were:

Security:

Pakistan's strategic environment has been conditioned by its perception of security threat from hegemonic India whose frequent past aggressions confirmed that she was determined to undo the creation of Pakistan. Such fears led the nation's strategic managers constantly engaged in search of a capability that could yield a sense of security. Therefore, logic of Pakistan nuclear weaponization should be seen as Indo centric aiming to neutralize conventional military edge of India over Pakistan.

Widening the Conventional Gap:

Pakistan's threat perception is not hypothetical; it is real and evolving since partition. The balancing of the security equation implies that the components; conventional as well as nuclear, remain in viable proportion because if the gap in conventional deterrence grows there is so much emphasis on the nuclear factor that only serves to lower the nuclear threshold. It is important therefore that gap in the conventional capabilities of the two countries remain within manageable limits. The Soviet Union and European countries were selling weapons and equipment to India while Pakistan was being denied similar treatment even from its 'most allied ally' –the U.S.A. rather we were facing economic and military sanctions. The fears of growing resource gap with India, credibility of defense alliances and most damaging fallout of the discriminative sanctions imposed by the USA and other Western powers led to further widening of the conventional gap and heightening of sense of insecurity in Pakistan which, in turn, set the pace for its reactive nuclear program.

Self-Reliance:

Pakistan learnt from 1965 and 1971 wars that neither USA nor any other power could be expected to intervene on behalf of Pakistan or provide extended deterrence in case of any future Indian invasion or nuclear intimidation as Indo- Soviet Treaty of 1970 was extended to India.[9]

To Demonstrate Credibility with explicit Posture:

There were perceptions in some quarters that Pakistan's nuclear program was still at its infancy and its claim of holding recessed deterrence is a bluff that bluff must be called now. Hence, Indian tests put Pakistan at cross road, of opposing alternatives, either to go for test or refrain from it. Both the options were attached with heavy price/ pay offs. Restraining from going nuclear was to put the credibility of its nuclear deterrence under shadow of bluff and waning out of its effect that has been achieved so far. The other option of going nuclear was to invite international backlash /sanctions on the one hand and provide an opportunity to transform its ambiguous position into a more explicit posture and remove doubts of its functionality. Pakistan that has already paid heavy price in the shape of military & economic sanctions, besides investing enormous economic, political and technological resources in the quest of nuclear deterrent could not afford jeopardize its credibility and put its hard earned deterrent in the shadow of doubt. Therefore, Pakistan reacted in direct response to the Indian nuclear tests apprehending that Pakistan's nuclear capabilities might be underestimated if they were undemonstrated.

Provocative statements:

The provocative statements like, teaching lesson to Pakistan, issued by the Indian Home Minister I.K.Adcvani and Defence Minister Fernandes,

just after the Indian nuclear tests created heightened fear of insecurity in Islamabad from Indian blackmail.[10] Though Pakistan realized that such provocative statements were meant to test its nerves and confirm the realty of its deterrence but Pakistan's silence or restrain to respond would have dissolved its nuclear deterrence and show of overt nuclear weapons capability was necessary for military security objective.[11]

Regain Balance of Power:

Despite, being at conventionally inferior position against Indian might, Pakistan was able to maintain balance of power against India with the help of its nuclear deterrence that was totally founded on the ambiguity of its status. Indian overt demonstration of its nuclear posture challenged the Pakistani claim of holding the deterrent thereby giving big tilt to the balance of power in favor of India that was already at luxurious position due to its conventional military superiority in quantitative and qualitative terms against Pakistan. Pakistan had no other option but to respond and regain the lost ground in the game of balance of power.

Public Opinion:

The action-reaction pattern of May 1998 tests contributed to the perception that every escalatory step taken by India, would force Pakistan to respond with symmetrical reply to satisfy its public opinion.

Bargains:

Pakistan chose to test at least in part because of concern that momentum toward signing of Comprehensive Test Ban Treaty could block the option altogether should India join the treaty in post test bargains.

Differing Perceptions:

There were different perceptions amongst the archrivals about regional stability and an equitable balance of power. For India, the regional balance meant possession of sufficient strength to deter China and Pakistan both, a condition that makes Pakistan insecure and calls for maintenance of credible nuclear deterrence. This difference in perceptions led to grim prospects for maintaining regional stability. Rather it adds a new and dangerous dimension to the geo-political and military tensions of the region leading to a chain reaction that may gravitate regional and extra-regional powers with vested interests.

Pakistan's nuclear tests were undertaken in self-defense and to counter the threatening statements of Indian leadership. Pakistan succeeded in establishing mutual deterrence that was believed to ensure the peace and stability of South Asia. It was presumed that the hard earned mutual deterrence will support nuclear stabilization in the region thereby ushering an era of durable peace between Pakistan and India. It was hoped that the nuclear deterrence would encourage a process of peace and rapprochement, help promote the peaceful resolution of outstanding disputes especially Jammu and Kashmir. However, things did not unfold themselves as expected. Rather they fueled nuclear and missile proliferation.

Theory of the Nuclear Deterrence and its Pre-requisites:

Deterrence as perceived academically, is not a strategy of war, it is a strategy for peace, designed to convince the opposition that aggression is the least attractive of all alternatives. Deterrence is an abstract phenomenon. It does not restrain the enemy physically, rather it restrains him psychologically. Deterrence, as observed by Thomas Schelling, "is concerned with influencing choices another party will make, and doing it

by influencing his expectations of how we behave. It involves confronting him with evidence for believing that our behavior will be determined by his behavior.[12] Whereas, in Colin Gray's words "deterrence refers to the effect when a person, institution, or polity decides not to take actions that otherwise would have been taken, because of the belief or strong suspicion that intolerable consequences would ensue from such action".[13] Since the end of 2nd World War, America's defense relied on the Cold War doctrines of deterrence and containment and principal function of nuclear weapons was to deter nuclear attack. Robert McNamara, U.S. Defense Secretary, while explaining US policy, observed:

> *The cornerstone of our strategic policy continues to be to deter deliberate nuclear attack upon the United States or its allies. We do this by maintaining a highly reliable ability to inflict unacceptable damage upon any single aggressor or combination of aggressors at any time during the course of a strategic nuclear exchange, even after absorbing a surprise first strike. This can be defined as our assured-destruction capability. Assured destruction is the very essence of the whole deterrence concept. We must possess an actual assured destruction capability, and that capability also must be credible. ... If the United States is to deter a nuclear attack on itself or its allies, it must possess an actual and a credible assured-destruction capability.[14] He continues further;*
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> *When calculating the force required, we must be conservative in all our estimates of both a potential aggressor's capabilities and his intentions. Security depends on assuming a worst possible case, and having the ability to cope with it. In that eventuality we must be able to absorb the total weight of nuclear attack on our country—on our retaliatory forces, on our command and control apparatus, on our industrial capacity, on our cities, and on our population— and still be capable of damaging the aggressor to the point that his society would be simply no longer viable in twentieth-century terms. That is what deterrence of nuclear aggression means. It means the certainty of suicide*

> *to the aggressor, not merely to his military forces, but to his society as a whole.*[15]

During the Cold War period nuclear strategy demonstrated that nuclear weapons were not meant for use but for deterrence. Its main purpose was to prevent others from the use of this capability. Many who see the Cold War as a stable period for interstate relations credit nuclear deterrence, and the large nuclear weapons arsenals deployed by the opposing camps. Nuclear weapons deter not only nuclear collusion but they also deter recurrence of large-scale conventional wars. But nuclear deterrence differs contextually from conventional deterrence. The conventional deterrence is prevention or dissuasion of an attack by threatening retaliation with non-nuclear weapons.[16] Whereas, in nuclear deterrence, the focus is on punishment, which may well be so devastating that, it makes the political ends irrelevant. The nuclear deterrence relies on certainty of belief that one side has sufficient military nuclear capabilities to assure the other side that it would not be worth to attack.[17] The test of deterrence is war and the truth of the deterrence is that if weapons are used, deterrence has failed. In military language deterrence has four types; deterrence by denial, deterrence by punishment, deterrence by defeat, and mutual deterrence. Deterrence by denial presents a situation where one side might wish to initiate war on its adversary but don't do so because it is convinced that it could not obtain its war objectives.[18] Under deterrence by punishment, the side that might wish to initiate war would not do so because of the belief that retaliation from the other side could inflict unacceptable damage to the attacker.[19] Whereas, deterrence by defeat mean that the side that might wish to initiate war would not do so because of the certainty that it would be defeated.[20] Mutual deterrence is a variant of mutually assured destruction

(MAD). The state of mutual deterrence exists up to the time potential adversaries are convinced about the catastrophe of attack initiation that mostly fits at nuclear war.[21] However, whatever its value or priority, the deterrent may not be regarded as credible unless it meets certain conditions to exist. The successful deterrence is the deterree's conviction that deterrer means what he says and he has the will to do what he threatens to do. The ultimate success or credibility of the deterrence is hostage to certain factors denoted as: C4 W

C4 W: (Capability, capacity, credibility, Communication of Will)

C4 stands for capability, capacity, credibility, communication and will or determination to use the nuclear weapons when the situation so demands. Capability means possession of weapon and technology, know how of assembling the device, possession of accurate means of delivery, capacity means even after absorbing the shock of nuclear strike, retaliate with sufficient stamina and sustainable power and inflict unbearable losses / punishment upon the enemy. In other words Capability is the demonstrated and perceived ability to use nuclear or other forces to achieve the desired effects. The desired effects include both punishment and denial. Deterrence is often characterized by combining capability and credibility. In the nuclear context, this means having the means to deliver and the will to order a punitive strike. To have a reliable credible minimum deterrent with a secure second-strike capability, a nuclear state must possess a survivable delivery mechanism that can conceivably strike the target. Accuracy of means of delivery guarantees the certainty of massive retaliation. To ensure reliability with consistency is today attached with the possession of triode that means holding a capability of delivery of nuclear weapon from ground, from air and from sea. In other words without appropriate capability and capacity, the threat cannot be

credible and deterrence is premised upon the credibility of the threat — which means that costs and risks must be considered very clearly before a certain strategy is formulated. A state's assured-destruction capability gives it the ability to make the cost that an adversary has to bear in any conflict outweigh any possible gains. If, therefore, a state's threat to impose these costs were sufficiently credible, an adversary would prefer backing off. Thus the ability to exert sustainable coercive pressure would seem to turn on the credibility of the threat. However, the credibility is function of capability and capacity of delivering sustainable matching response.

Whether conventional or nuclear, one of the basic prerequisites of effective deterrence is clear *communication* — to convey the threat. Whether direct or indirect, the communication must be tacit with unambiguous gestures or actions. Because deterrence seeks to prevent certain types of contingencies from arising, communication becomes central to the notion to give clear message of unbearable damage or severe retaliation with unmanageable loss.

Will and determination of the leadership to make use of the capability of deterrence is very critical to the credibility of deterrence. Without questioning the moral acceptability of nuclear deterrence' in jus ad bellum' (the reason to go war) and 'jus in bello' (the way in which war is conducted)[22], the credibility of deterrence ultimately relies on a determination to use nuclear weapons as the last resort. The adversary should know this resolve or determination to use in clear terms without any ambiguity. However, according to Field Marshal Montgomery, the fear of atomic and nuclear weapons is a powerful deterrent to war; but once a world hot war started both sides are likely to use them.[23] The renowned military strategist Liddell Hart was one of the first to draw the

attention to the utility of relying on nuclear power "as a continuation of policy by other means."[24] A classic case of communicating will to solidify the credibility of deterrence was when President Kennedy, placed US nuclear forces on red alert, when it was learnt through aerial intelligence that USSR was secretly installing medium range nuclear missiles in Cuba, and sent a credible message through naval blockade of Cuba, that nuclear war between the two super powers could not be averted unless USSR withdrew the missiles. The Russians withdrew on the condition that Cuba would not be attacked. Although deterrence requires a determination to benefit nuclear weapons in retaliation and counter strategies based on a non-retaliation policy or rejecting the retaliatory use of nuclear weapons have aspects making the deterrence less reliable, huge environmental damages and the loss of life are the outcomes of any nuclear exchange regardless of its size. However, deterrence irrespective of its type is an abstract in value and near to be ineffective as soon as a state is believed to be found in a position- to use it or lose it. Therefore, nuclear weapons are to be used as instrument of political influence in war and peace both as Clausewitz noted "war is continuation of politics by other means".[25]

Pakistan: No First Use Option or Flexible Response?

A quest to ensure a credible deterrent is also a major factor in Pakistan's refusal to sign a "no first-strike" pact with India. To maintain the deterrent effect of its nuclear capability Pakistan recognizes the importance of reserving the right to launch a nuclear strike in case of an Indian conventional advance. What is implied by a no-first-use (NFU) strategy is either that the purposes served by retaining the first-use option are no longer desirable or that there is some other means of achieving those purposes? Owing to the Pakistan's lack of strategic depth,

imbalance in conventional forces and location of its main population centers in proximity to its Eastern borders, no-first-use nuclear posture could invite aggression and leave Pakistan highly vulnerable to India in any long drawn out conventional war. Therefore, desire to use nuclear weapons to compensate for conventional inferiority has been evident in Pakistan's security calculations. That's why; Pakistan does not subscribe to any formal or well-defined nuclear doctrine and clearly rejected the "No-First-Use" (NFU) commitment and chosen to remain ambiguous and flexible. Since the sense of insecurity has been the central motive behind Pakistan's quest for acquiring nuclear weapon therefore, Pakistan's nuclear doctrine should be flexible and dynamic to adapt itself to the changing security environment. Hence, many Pakistani security analysts are opposed to no-first-use policy and their rationale are:

- India exercises strong military disparity against Pakistan with an army twice the size of its adversary, an air force, which is three times of Pakistan's and a navy, which is four times as large as of Pakistan's. A quest to ensure a credible deterrent is the major factor in Pakistan's refusal to sign a "no first-strike" pact with India. To maintain the deterrent effect of its nuclear capability Pakistan has to reserve its right to launch a nuclear strike in case of an Indian conventional advance.
- General Mirza Aslam Beg, former Army Chief, said in a seminar that despite, having superiority in conventional weaponry, Indian could not attack Pakistan because of the fear of a nuclear retaliation.[26] Because, in any future conflict, India cannot rule out the possibility that Pakistan will resort to using its nuclear weapons, when driven to the wall.[27]

- Since the nuclear weapon is a weapon of last resort, therefore, Pakistan should keep the option for use of nuclear weapon open like NATO military doctrine of 'flexible response' and adoption of no-first-use concept on the part of Pakistan would compromise the concept of its hard earned nuclear deterrence.
- Pakistan's quest for nuclear weapon hinges around the maintenance of a credible nuclear deterrence that is beyond any pray of preemption. The only credible nuclear force could make India believe that her preemption, irrespective of its nuclear or conventional nature, would not succeed rather, it would call for a damaging retaliation in nuclear term.
- Not withstanding to the moral/ ethical responsibility of nuclear weapon state with catastrophic consequences attached to the aftermath of any nuclear attack, the most stable nuclear modus operandi for Pakistan seems to be the maintaining minimum credible nuclear deterrence through the maintenance of second strike capability, whereby it is able to inflict unacceptable damage on its adversary in preemption or even after it had been attacked. But when the situation is referred to a country like Pakistan that have urban populations in proximity of borders, conventional military system inferior to its adversary, limited depth to keep its strategic weapons/ assets away from the range of enemy weapon systems, and lack of stamina to retain its retaliation capability/ capacity after withstanding the initial shock, the option of second strike capability would be tantamount to suicidal. Rather, an option of maintaining and employing minimum credible deterrence to ensure security and sovereignty of Pakistan at all cost. Therefore, Pakistan's Nuclear

weapons should be seen as an antidote to its conventional inferiority to Indian military might-whether real or perceived where, the weaker side seeks to deter conventional attack by threatening a nuclear response. The success of deterrence is measured by events that do not happen, and If Pakistan deterrence has failed to refrain India from aggression or coercion because of the implicit or explicit threat of unacceptable retaliation then its nuclear weapons may provide the answer to an overwhelming conventional attack. In theory, this would usually entail battlefield use of tactical nuclear weapons. General Kudvai, in charge of Pakistan strategic assets has articulated a set of conditions under which Pakistan will choose to use its nuclear weapons only "if the very existence of Pakistan as a state is at stake" and this meant:[28]

- India attacks Pakistan and takes a large part of its territory
- India destroys a large part of Pakistan armed forces
- India imposes an economic blockade on Pakistan
- India creates political destabilization or large scale internal subversion in Pakistan

However, to realize any of the above-mentioned modus operandi Pakistan must have to ensure the following:

- Modernization of its nuclear weapons program with main aim of maximizing its cutting edge in qualitative and quantitative term. Preponderance of quantity of nuclear weapons at the point and time enhances the capacity of retaliation with deadly blow. Continued modernization of weapons adds up to quality and experience curve in production and assembly thereby reducing the reaction / preparation time to respond.

- To make the nuclear deterrence credible, developing longer-range and more reliable missiles, acquisition of nuclear capable aircrafts and submarine launcher systems reined through perfect command and control system is mandatory requirements of credible delivery systems. Therefore, Pakistan should continue to improve and strategically employ integrated use of its triode i.e. ground to ground missile system (combination of short range, medium range and intermediate range weapon systems), Sea Launched Missile System and air crafts on nuclear delivery role.
- Strategically positioned Missile defense system integrating ground, air and space dimensions to maximize interception of enemy's nuclear missiles in the air, and affect its ballistic performance well before it reaches to its destined target.
- Employ electronic counter measures and electronic counter counter measures to jam and obstruct the functioning of radars and navigation system of enemy aircrafts on nuclear role, cruise missiles and ballistic missiles.

CHALLENGES TO PAKISTANI NUCLEAR DETERRENT

Over the decade, nuclear modernization in the region continued bringing qualitative and quantitative improvements in fissile material, warheads, delivery vehicles and systems to counter them. Desire to maintain credibility of sustainable and consist deterrence is dependent upon controlling of independent variable because any change in these variable affects the credibility of deterrence. Since Pakistan subscribes to "minimum deterrence' as cornerstone to its security policy[29] therefore, it has to be capable of evolving itself to match the hard reality of Indian acquisition of new weapon platforms, sophisticated command and

control and missile defense systems from Russia, Israel and the U.S. Indian's purchase of Barak Missiles[30] and Arrow Missile system[31] from Israel, induction of nuclear submarines and SU 30 aircrafts from Russia, and Phalcon early warning and surveillance system[32] from Israel, all seem to have brought a serious challenges to the Pakistan's hard earned nuclear deterrence. The threat is going to be multiplied manifolds with the deployment of US tactical missile defense system (part of its NMD) and execution of Indo- US nuclear deal under agreement of 123. This all encompassing will present serious challenges to the efficacy and reliability of the Pakistan's nuclear deterrence even to its minimum level. Silence may be the greatest threat to the credibility of nuclear deterrence. There is incumbent upon the policy makers in Pakistan to be vigilant against the shifting tide in nuclear balance of power or degrading deterrent. Some of the challenges having serious bearing on the efficacy of Pakistan's nuclear deterrence that it managed to earn a decade ago are discussed one by one in succeeding paragraphs:

Missile Defense:

Efficacy of nuclear deterrence moves to dead end if the adversary prevents enemy missiles landing on its territory by intercepting and effecting its ballistic in the air. Missile defense initiative is provision of protection from limited ballistic missile assaults, rather than relying on the abstract theory of deterrence. India plans to have a three tired ABM system with the PAC-3 (Patriot anti Ballistic Missile System), the Arrow Missile -II missile defense system, Barak anti-missile system and Phalcon early warning system. These ABM systems enable India to affect the Ballistic performance of Pakistani ground-to-ground and Sea Launched missiles during their flight and destroy them before they reach to their target. Besides, acquisitions of Arrow system India is also on the

way to develop its own integrated air defense system capable of engaging target aircraft beyond 100 km and enhance India's capability to defend itself against hostile 2,000-km intermediate range ballistic missile systems. With this latest successful interceptor launch, India joins the exclusive club of the United States, Russia, France and Israel in having developed such an air defense system.[33] Primary logic behind the Indian acquisition and deployment of ballistic missile defense systems is her belief that nuclear deterrence demonstrated from Pakistan has worked effectively so far. Similarly, once India believes that it has a perfect defense against Pakistan, and then Pakistan may also believe that it has lost its deterrent capability against India. Any development, that removes the credibility of the nuclear deterrent for either side is likely to result in efforts to expand the country's nuclear capability, thus raising the level of deterrence. Ballistic missile defenses, therefore, will probably trigger new arms races. If India and Pakistan each have 100 nuclear warheads capable of attacking the other, both are likely to believe the other side will be deterred from an attack. If India attempts to introduce a defensive system with 200 anti-ballistic Arrow Missile or other interceptors, Pakistan may believe that its nuclear-armed ballistic missile force will be made impotent and decide to increase its arsenal of deliverable warheads from 100 to 4,000 in order to restore its deterrent capability in the face 200 Indian defensive interceptors.

Pakistan's vulnerable missile defense system was exposed in 1998 when US naval missiles flew undetected over Pakistan's airspace. On 20 August, 1998, US Navy ships and submarines in the North Arabian Sea fired some 75 to 100 Tomahawk missiles at targets which Washington claimed were the training camps of Osama bin Laden near Khost in Afghanistan. The missiles were in flight over the Pakistani

airspace for over ninety minutes before reaching their targets but not a single missile was detected.

Air Defence:

Nuclear weapons if ever used in South Asia can be delivered predominantly by two means: aircraft or missiles. Pakistan, in order to retain a credible deterrent, has to ensure that its aircraft are not rendered ineffective by an Indian pre-emptive strike. If an Indian pre-emptive strike is capable of destroying important runways or aircraft shelters housing Pakistani delivery aircraft before giving Pakistan a chance to retaliate, the nuclear deterrent will no longer remain credible. An appropriate response from Pakistan is likely to ensure that its nuclear arsenal remains capable of surviving an Indian pre-emptive strike. In short Pakistan should not forget one simple fact that it is not how many nukes it have and not how stealthy its delivery system is. What will matter is how good is your air defense and missile defense system. That is where India is spearheading silently to succeed and create 'shock and awe' for Pakistan. Pakistan's timely and matching response is going to be decisive factor in maintaining or loosing its deterrence.

Nuclear Weapon Delivery Systems:

To have a reliable credible minimum deterrent with a secure second-strike capability, a nuclear state must possess a survivable delivery mechanism that can conceivably strike the target. India and Pakistan being a nuclear arm state have also been striving to have multidimensional delivery systems i.e. from land, from air and from sea. The present status of Indian inventory holds triode delivery mechanism as an integral part of its nuclear doctrine. Pakistan Air Force fighters might be able to intercept it SU 30 aircraft,[34] Mig 27, Jaguar, and

Mirage-2000 when employed on nuclear delivery role however, Pakistan doesn't possess any capability to intercept Indian surface to surface missile Agni-II (2500 km range), or Agni III (3,500 km), or submarine launched Sagarika (or short range Prithvi) missiles capable of delivering nuclear warheads across the depth and breadth of Pakistan.

Until the recent induction of the Agosta 90B submarine, Pakistan could only deliver its nuclear weapons using F-16 and surface-to-surface missiles under the Pakistan Army. On receipt of long awaited F-16s, Pakistan's F-16 fleet will be expanded, but it is unclear what portion of the fleet will be capable of a nuclear mission. Mirage III and V aircraft could also be used, although they would have limited range. A-5's may have been modified to carry a nuclear payload. Pakistan's deployed missile systems include the Ghaznavi (Hatf-3, range 290 km), Shaheen-I (Hatf-4, range 600-800 km), and the Ghauri-I (Hatf-5, range 1,500 km) or Shaheen-II (Hatf-6, range 2,000-3,000 km)[35]. In addition, Pakistan's limited number of F16 air craft, and lately inducted in end 2007 the Agosta 90B carry the nuclear capable Harpoon cruise missiles[36] adds up to Pakistan's deterrent up to some extent. Besides, such profile triode, both countries have also achieved considerable progress in manufacturing another delivery system-cruise missiles meant to have land, sea, and air versions. BrahMos[37] missile of India with the Russian help while Pakistan has the Babur[38], and both of the cruise missiles have been successfully tested in 2007. In short both India and Pakistan are struggling to perfect their missile arsenals, both ballistic and cruise to strengthen their nuclear delivery capabilities. However, Pakistan does not have to feel threatened by every Indian missile development, it would need to develop and update its own weapon systems so that it can develop solid-fuelled missiles and a credible second strike capability.

Surveillance Systems:

Another problem for Pakistan is the Indian efforts to beef up their aerial surveillance systems and peep through deep into Pakistan's territory. India is in control of two Russian A-50s[39] after their own Airborne Surveillance Platform (ASP) crashed in trials in January 1999. The acquisition is a great force multiplier for India as it enables to look deep into Pakistan and detect Pakistani warplanes and launchers at the start of their move. A-50s coupled with Israeli UAVs will impact Pakistan's conventional force deployments in peacetime and war both. To keep its deterrent operational and retaliatory second strike capability intact Pakistan has to have hardened silos for its weapons and their delivery vehicles well dispersed on mobile launchers. However, keeping in view the range of A-50s, and UAVs Pakistan may need to push deployments of its delivery means well deep in the rear into Balochistan that may ask for enhancement in their range.

Indo-U.S. Nuclear Cooperation:

Since July 2005, when the U.S. and Indian governments unveiled their nuclear cooperation agreement, a debate has risen over its impact on the security and stability of the region in general and Pakistan in particular. This agreement will allow India to acquire nuclear technology and materials from the United States and other suppliers. In return, New Delhi will designate fourteen of its nuclear facilities for civilian use and eight for military use. The deal caries a potent potential impact on nuclear modernization, capable of bringing substantial qualitative and quantitative increases in fissile material and warheads visa vie Pakistan. The deal implies that India's nuclear weapons program will continue without interruption. Allowing eight reactors to operate for military purpose without any safeguard using all of its indigenously produced

uranium and platinum without any safeguards will provide a way to expand its nuclear weapons arsenal. The remaining fourteen would be safeguarded only so long as fuel is provided for them from the NSG. The imported uranium fuel would free up India's limited uranium reserves and allow India to increase its production from the estimated six to 10 additional nuclear bombs per year to several dozen a year.[40] Any fuel supply interruptions from the US side can give India an option to withdraw its IAEA safeguards once they are no longer using safeguarded material.[41] In short, given India's past record, there is no guarantee that the dual use technology provided for the production of civil nuclear energy by the US will not be diverted towards nuclear weapons production. India's so called peaceful nuclear explosion of 1974 is an example in this regard which was developed out of the American's technology help under "atom for peace program" and Canada provided fuel for CIRUS civil purpose reactor. Foregoing in view, the intended nuclear cooperation will offset Pakistan's quantitative and qualitative balance in nuclear deterrence against India, as and when the deal takes to grounds.

Conclusion

The South Asia has been the ground where game for gaining and maintaining the balance of power has been played for past sixty years or more between USA and USSR, India and Pakistan, and India and China. India and Pakistan, despite their poverty-ridden status in the world have been entangled to invest their scarce resources in the game of balance of power. Had these states not maintained such a huge force structure; these resources would have sufficed to bring them at par with the developed world. However, it was felt in May 1998 that the pursuit of Pakistan's nuclear deterrence has reached to its logical end with the declaration of

its explicit posture of deterrence. But, the audit of the decade long Indian modernization reveals that threat of decaying in nuclear detergency is looming for Pakistan, unless it does not restore its credibility by demonstrating matching response to the emerging threats from the deployment of Indian missile and air defense systems, positioning of her surveillances and intelligence systems, and stockpiling of nuclear weapons so on and so forth. Further more nuclear deterrence alone cannot ensure security to Pakistan unless it is backed by an ideological propriety, aggressive diplomacy, and a viable conventional capability enjoying an optimum correlation of forces with India, and adjusted correctly to the required level of operational balance. What is imperative now is to make effective adjustments in the field of missiles defense system and the weapon delivery vehicles so as to ensure a viable and well-integrated deterrence, dove tailing nuclear and conventional capabilities. Besides, rendering a wakeup call for Pakistan, I would like to stress both India and Pakistan to fine-tune their bilateral perceptions, remove misperceptions, and realistically formulate their nuclear and conventional strategies with a view to stabilizing the concept of mutual deterrence without ever resorting to threats of mutual annihilation.

End Notes:

[1] .N. Kunju, *Indo-Pak Nuclear Cold War*, New Delhi, Reliance Publishing House, 2002, p.27
[2] .Talat Masood, "Pakistan as a Receptive Proliferator", *Nuclear Proliferation and International Security*, ed by, Morten Bremer Maerli and Sverre Lodgaard, London, Routledge, 2007, pp. 172-193
[3] .The convener of Indian National Security Council Mr Jasjit Singh firstly coined the term "Recessed Deterrence". See: Jasjit Singh, "prospects for nuclear proliferation", in S. Sur, ed*., Nuclear Deterrence: Problems and Prospective in the 1990,* New York, UN Institute of Disarmament Research, 1993. P.66
[4] .George Perkovich, "A Nuclear Third in South Asia", *Foreign Policy*, Number 91,1993, pp. 85-104
[5] .Zulfqar Khan, "India-Pakistan Nuclear Rivalry: Perceptions, Misperceptions, and Mutual Deterrence", Islamabad, IPRI Paper 9, January 2005
[6] .Shamshad Ahmad, "The Nuclear Subcontinent: Bringing Stability to South Asia", *Foreign Affairs*, July/August 1999
[7] .Schaffer, 'US Influence on Pakistan', *Washington Quarterly*, vol.26, no. 1, Winter 2002–03, p. 172.
[8] .'Vision of peace in South Asia', Sinha proposes 10-point Agenda', *Pakistan Times, 22.1.2004*
[9] .Talat Masood, "Pakistan as a Receptive Proliferator", opcit
[10] .After the Indian tests, India's Home Minister, L. K. Advani, "vowed to end the Pakistani menace" once and for all. See: *Asian Age*, May 19, 1998.
[11] .See statement by Munir Akram, Ambassador/Permanent Representative of Pakistan to the United Nations Conference on Disarmament, on May 14, 1998, at the Plenary of the Second Session of the Conference on Disarmament, <http://cns.miis.edu> (March 1, 2000), p. 5.
[12] .Thomas XC. Schelling, *The Strategy of Conflict, Cambridge*, Harvard University Press, 1960, p.13
[13] .Colin S. Gray, "Deterrence and the nature of strategy," in *Deterrence in the21st Century*, ed. Max G.Manwaring, Portland, Frank Cass, 2001, p.18
[14] .Robert S. McNamara, *The Essence of Security,* New York: Harper and Row, 1968, pp. 52–53.
[15] .ibid
[16] .Charles W. Keley and Eugene R., *World Politics: Trend and Transformation*, Boston ,Bedford, 2004, p. 513
[17] .Daniel S. Papp, *Contemporary International Relations: Framework for understanding*", New York, Macmillan Publishing, 1998, p. 401
[18] .ibid
[19] .ibid
[20] .ibid
[21] .ibid
[22] .From the perspective of international Laws of War, Geneva Conventions, Protocol I of 1977, article 35 imposes restrictions upon the use of such an uncontrollable power. It states that:

I. In any armed conflict, the right of the Parties to the conflict, the right to choose methods or means of warfare is not unlimited.
II. It is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering.

[23] .Carver, Field Marshal Lord (1982), *A Policy for Peace*, Redwood Burn, Trowbridge, Wiltshire, p.32
[24] .ibid., p.35
[25] .Carl von Clausewitz, *On War,* Princeton, Princeton University, 1976
[26] .Dawn ,Islamabad, April 3, 1994
[27] .Khan, Munir Ahmed, "Nuclearisation of South Asia and its Regional and Global Implications". Regional Studies. Autumn, 1998, p.43
[28] .Nuclear Safety, Nuclear Stability And Nuclear Strategy In Pakistan: A Concise Report Of A Visit By Landau Network - Centro Volta, http://lxmi.mi.infn.it/~landnet/Doc/pakistan.pdf
[29] .Musharaf, "Pakistan's Nuclear Policy", Statement reported by Reuters, 6th March 2003.
[30] .The ***Barak Weapon System*** is a highly advanced ship-borne anti-missile-missile point-defense missile system, as well as an anti-air/anti-surface gunnery control system. The system is highly effective against anti-ship sea-skimming missiles and aerial threats. The System uses advanced radar techniques for target acquisition, target tracking, own-missile tracking and guidance. The missile Barak is vertically launched, supersonic, lightweight Barak missile that has a very large and powerful warhead. The System is operated automatically from the detection stage up to the target destruction, while providing the operators with a complete engagements situation picture and allowing their manual intervention. The system provides 360 degrees hemispherical coverage, at 10 kilometers. The system remains fully capable even in an ECCM saturated combat environment. It can intercept threats at a range of 10 kilometers, down to 500 meters from the ship. It can intercept threats at a range of 10 kilometers, down to 500 meters from the ship.
[31] .The ***Arrow missile*** is launched before the threat missile's trajectory and intercept point are accurately known. As more trajectory data becomes available, the optimum intercept point is more precisely defined and the missile is guided towards the optimum intercept point. The Arrow 2 system can detect and track incoming missiles as far way as 500 km and can intercept missiles 50-90 km away The Arrow 2 uses a terminally-guided interceptor warhead to destroy an incoming missile from its launch at an altitude of 10 to 40km at nine times the speed of sound. Since the missile does not need to directly hit the target--detonation within 40-50 meters is sufficient to destroy an incoming warhead. The command and control system is designed to respond to as many as 14 simultaneous intercepts.
[32] .The Phalcon is an Israeli manufactured Airborne Early Warning, Command and Control (AEWC&C) system. India has bought three of them for $1.1 billion (approximately Rs 5,000 crore or Rs 50 billion). It provides real time

surveillance of a few hundred kilometers of territory by picking up a low flying aircraft, a missile or communication up to some 300 miles. The radar will help Indian Air Force (IAF) to detect aerial threats by offering a very long-range identification of targets and control over weapons aimed at them. It would also allow the IAF to peep deep into enemy territory and serves as a platform to direct combat planes to targets. Interestingly, the United States had previously also been instrumental in pressuring Israel to scrap a similar deal with China, the major concern then being the enhanced Chinese detection capabilities against U.S. forces should China launch an offensive against Taiwan

[33] .Dr VK Saraswat , "Demonstration of integrated missile air defence system by June next year", 10 December 2007. Available on: http://www.domain-b.com/defence/air_space/iaf/20071210_missile.html. (11.5.08)

[34] .In 2000, New Delhi concluded a $3 billion contract with Russia to produce under license 140 Su-30 multi-role fighters. See: Anthony H. Cordesman, Arleigh A. Burke, Weapons of Mass Destruction in India and Pakistan, Center for Strategic and International Studies, Washington, 2002

[35] .Development is also taking place to improve the range, accuracy and reliability of these missiles and Shaheen-II (Hatf-6, range 2,000-3,000 km) was successfully tested in 17th April 2008

[36] .S.M. Hali, "Second, Strike Capability," *The Nation* (Pakistan), August 15, 2006

[37] .Rahul Bedi, "India Nears BrahMos Submarine Test Firing," *Jane's Missiles and Rockets*, July 1, 2007.

[38] ."Pakistan military test fires missile," *USA Today*, March 22, 2007. Available at :
http://www.usatoday.com/news/world/ 2007-03-22-pakistan-missile_N.htm.

[39] .The A-50 can trace up to 50 targets simultaneously and can stay in the air without refueling for four hours at a station 1000 kms from its base. AWACs can scan airspace and position interceptors in the air well in advance before hostile strike aircraft become a factor.

[40] .Joseph Cirincione, "Nuclear Cave In," *Pac Net*, no. 8A, Pacific Forum CSIS, March 2, 2006. Also see; Ashley J. Tellis, "U.S.-Indian Civilian Nuclear Cooperation and India's Nuclear Arsenal", Carnegie Endowment for International Peace, Washington, 2006

[41] .Sharon Squassoni, "US Nuclear Cooperation with India: Issues for Congress", *CRS Report for Congress*, Congressional Research Service, Library of Congress, March 28, 2006.

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