

The Next Decade of Nuclear Unlearning: Command and Control and Management of Pakistan's Nuclear Weapons

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Introduction

Bernard Brodie described nuclear weapons as the absolute weapon. Given this status, their management and operationalization is a serious business. Pakistan remains a nascent nuclear weapons state and is still learning how to effectively manage, control, and command its nuclear capabilities. The history of the nuclear age informs us that advanced nuclear powers develop their systems through their national culture and historical experience. Organizational learning suggests that learning takes place more easily within an established mindset or image. A mindset is a set of assumptions, methods, or notations held by one or more people that generate a powerful belief to approach challenges in particular ways. The human tendency to perceive in a particular view and stick to it requires the ultimate act of unlearning. This means that one must challenge the assumptions with which all prior understandings were founded on.

Nuclear weapons capability has always developed within the iron-cast molds of the incumbent nation's psycho-social and political milieu. The most important factor that affects the evolution of nuclear command and control (C2) originates from organizational mindsets and internal political dynamics. These two factors have consequences on the formation of norms, structures, and competencies regarding nuclear C2. Concerning Pakistan's internal dynamics and external choices, the military was instrumental in developing Pakistan's strategic culture since the 1950s. This influence is visible in all walks of Pakistan's political and security establishments. It is widely believed that Pakistan's security policy is heavily dominated by the military, especially the Army. The evolution of Pakistani nuclear command and control was heavily affected by this phenomenon.¹

This chapter advocates that a revolutionary change in Pakistan's existing C2 system is necessary to accomplish effective nuclear learning. It proposes a joint civil-military methodology that results in a balanced and reliable nuclear C2 management system. The chapter assesses the development of nuclear norms and structures birthed during the first decade of nuclear learning, finding that in Pakistan they matured under the dominance of a military controlled government, where the Pakistani Army held sway.² As Pakistan's governing structures shift from authoritarianism to democracy, the question of civilian oversight and control of the absolute weapon becomes extremely important for

¹ Major General (retired) Mahmud Ali Durrani, "Pakistan's Strategic Thinking and the Role of Nuclear Weapons, *Cooperative Monitoring Center Occasional Paper 37* (Sandia National Laboratories, July 2004), 27.

² Hasan Askari Rizvi, *Military, State and Society in Pakistan* (London: Macmillan Press Ltd, 2000), xii. This study establishes the Army's dominating role in the state and society of Pakistan. There are other scholarly works that explain the socio-political and organizational interests of the Army. See for example Ayesha Jalal, *State of Martial Rule: the Origins of Pakistan's Political Economy of Defense* (Cambridge: Cambridge University Press, 1990); Ayesha Siddiqi, *Military Inc: Inside Pakistan's Military Economy*, (London: Oxford University Press, 2004); Shuja Nawaz, *Crossed Swords: Pakistan, Its Army, and the War Within* (Oxford: Oxford University Press, 2008).

every nuclear armed country. Thus, going forward, a one service dominated nuclear command and control (C2) system must shift toward a more collective one.

Evolution of Nuclear Command Authority in Pakistan

In October 1999, for the fourth time in Pakistan's history, the military launched a successful coup. Some scholars have described the coup as an "institutional response to what senior commanders perceived as a threat to the professional and corporate interest of the Army."³ A year later, under Pakistan's new leadership, a new National Command Authority (NCA) was set up. This development was described by one scholar as a "strategic imperative, not only to establish a harmonized command and control mechanism, operational policy, and development strategy, but also to provide credibility to strategic deterrence."⁴

General Pervez Musharraf viewed the NCA as "...the apex body responsible for all policy matters including the development and employment of our strategic assets."⁵ The NCA's architecture that developed under his leadership exhibited a mindset of exclusivity for the Army. The NCA was hardly a product of participative and collective wisdom from Pakistan's strategic community, political leadership, and diplomatic corps. And, to this author's knowledge, other military services were not consulted in the basic planning of NCA.⁶ According to Shuja Nawaz, "command and control at [the] national level is unworkable and problematic since the army dominates all events and proceeds largely on its own."⁷ This situation became more pronounced when Pakistan's military leadership took the reins of presidential power after 1999. Like the country's civilian institutions, the other services also came under the Army's political control. This seems to have led to a somewhat constrained independence of thought among service chiefs, because Air Force and Navy chiefs could no longer contribute their views on an equal footing with the Army chief. Consequently, a balanced and effective nuclear C2 system could not evolve.⁸

Under the new NCA system, the chair of the NCA was the President, Gen. Pervez Musharraf, who also was the Army chief. This system also had three tiers. The first was the Employment Control Committee (ECC) and Development Control Committee (DCC). The second, the Strategic Plans Division (SPD), and the last, the three service's Strategic Forces Commands. The ECC was the main policy and decision making organ of the NCA charged with coordinating political command with its military counterpart. The Foreign Minister was its Deputy Chairman. Other key members of this committee were the Ministers of Defense, Interior, Finance, Chairman Joint Chiefs of Staff Committee (CJCS), Chief and Vice Chief of Army Staff, Chief of Naval Staff, Chief of Air Staff,

³ Rizvi, *Military, State and Society in Pakistan*, xii.

⁴ Durrani, "Pakistan's Strategic Thinking and the Role of Nuclear Weapons," 49.

⁵ Pervez Musharraf, *In the Line of Fire* (New York: Free Press, 2006), 287.

⁶ This information is based on author's observation and interaction with senior airmen and sailors during 1998-2000; an already prepared document on SPD/NCA structure was sent to air force and navy.

⁷ Nawaz, *Crossed Swords*, 581.

⁸ Ibid.

and any other invited members if required. The Director General of SPD was also the Secretary of the ECC.⁹

The Director General of SPD was an Army general and most of the officers in the organization also came from the Army, leaving little representation for Pakistan's other military services and no civilian representation in the secretariat either. All scientific organizations, including the three commissions charged with civil and military responsibilities were also brought under control of the NCA. SPD's mandate covered everything nuclear related including civilian related projects.¹⁰ Over the decade, SPD's structure and responsibilities expanded into a much larger organization encompassing all aspects of nuclear security.

The SPD's Security Division is its largest component in terms of number of personnel—estimated at around eighteen thousand. This division is responsible for the internal and external security of all sensitive nuclear installations, sites, and assets. The service's Strategic Forces Command is the third main NCA organ. The individual services retain technical assistance, training, and administrative control of their nuclear weapon's delivery systems. Nonetheless, the operational control for nuclear weapons remains with the NCA. The Army Strategic Force Command is responsible for ballistic and cruise missiles while the Air Force Strategic Command operates the aircraft capable of delivering nuclear warheads. The Naval Strategic Force Command was formally established on May 19, 2012 and is likely to develop a sea-based nuclear deterrent in the near future, which would guarantee the nation's second strike capability.¹¹

The NCA embodies a formal and declared nuclear C2 arrangement. It is the locus of Pakistan's nuclear deterrence in peacetime, crisis, and war. During peacetime, the SPD has successfully endeavored to maintain deterrence stability. During sporadic Indo-Pak crises, it has worked efficiently to signal the nation's resolve and achieve crisis stability. The NCA and SPD have also been important in changing mindsets inside the Pakistani nuclear structure, especially among individuals and facilities that previously operated with minimal oversight.¹² The SPD has developed a nuclear doctrine of sorts. Export control regulations have been augmented and safety and security procedures have been reviewed and strengthened. Overall, the SPD has done well in checking nuclear proliferation and ensuring the safety and security of Pakistan's nuclear weapons and facilities.

After the exit of President Musharraf and resumption of a democratic polity in Pakistan, there have been some promising developments regarding the NCA. On January 28, 2010, the Parliament passed

⁹ Peter Lavoy, "Pakistan's Nuclear Posture: Security and Survivability," Paper presented to the Conference on Pakistan's Nuclear Future, Nonproliferation Education Center, Washington, DC, April 28, 2006 12-14, available at <http://www.npolicy.org/files/20070121-Lavoy-PakistanNuclearPosture.pdf>.

¹⁰ Durrani, "Pakistan's Strategic Thinking and the Role of Nuclear Weapons," 51.

¹¹ The News, Islamabad, 19 May 2012.

¹² For a scholarly piece on achievements of NCA, see Feroz Hassan Khan, "Political Transitions and Nuclear Management in Pakistan" in *Nuclear Weapons Security Crises: What Does History Teach?* eds. Henry Solkolski and Bruno Tertrias (Carlisle Barracks, PA: Strategic Studies Institute, Army War College, 2013). Also see Feroz Hassan Khan, "Nuclear Security in Pakistan: Separating Myth From Reality," *Arms Control Today* (July/August 2009).

the NCA Act, which hands over the nation's nuclear arsenal to the prime minister. Some analysts suspect that the transfer will not have a significant effect on the practical control of Pakistan's nuclear arsenal and that the act will not lessen the Army's hold over nuclear weapons because "civilians have never controlled Pakistan's nuclear program."¹³ Notwithstanding this pessimism, the NCA Act should have positive effects on the normative and practical control of nuclear weapons in Pakistan in the coming years.

Analyzing Pakistan's NCA

Lt. General Khalid Kidwai was appointed the first Director General of SPD in March 1999 and he held this position after his retirement from active duty until December 2013.¹⁴ Additionally, a large contingent of officers has continued in the same place after retirement, some of whom have continued to serve since the inception of the organization. Given the concentration of military generals in the NCA, decisions to employ nuclear weapons are governed by an Army-centric mindset. Elsewhere in the world, decisions to employ nuclear weapons are considered the final domain of civilian politicians in consultation with the military. In Pakistan's case, it seems to be the other way around.¹⁵

After the Musharraf regime ended, the Pakistani constitution was amended by the newly democratic leadership through the 18th Amendment. This amendment made the Prime Minister as the head of government and the President a ceremonial head of state.¹⁶ Despite the Prime Minister's leadership of the NCA, the military—in this author's opinion—continued to dominate nuclear decision making.¹⁷ According to Michael Krepon, "until this dynamic changed, no matter which civilian sits at the apex of Pakistan's NCA, the decision making power would rest in uniform; the votes behind closed doors on crucial national security issues in Pakistan have always been heavily weighted in favor of the military."¹⁸ In the opinion of one Pakistani journalist, the public commonly believes that the fingers on Pakistan's nuclear weapons are those of Army generals, not the people's representatives.¹⁹ This perception points to some tension in the effectiveness and reliability of command and control systems. Democratic traditions warrant that all nuclear weapon management and use must remain in control of civilian leaders through peace, crisis, and war. Secure C2 systems and infrastructure require nuclear-resistant buildings, with redundancies and secure multi-channel

¹³ S.H. Hasan, "Command and Control of Nuclear Weapons in Pakistan," *Swords and Ploughshares* 9, no. 1 (1994), 13.

¹⁴ Lt. Gen. (retired) Khalid Kidwai has been replaced by Lt. Gen. Zubair Hayat. Lt. Gen. Kidwai continues to be advisor to the Pakistan's NCA until the time of this writing.

¹⁵ Many scholars and former officials in knowledge of the working of the system contest this assertion. They claim that the NCA employment decision is by consensus of all civil and military officials – with final approval resting with the highest civilian authority – the prime minister.

¹⁶ The head of state was still supreme commander of the armed forces and chairman of the ruling political party, who appointed the Pakistani prime minister. After the 18th amendment, he absolved himself of a seat in the NCA.

¹⁷ "National Assembly Passes 18th Amendment," Associated Press of Pakistan, April, 20, 2010, available at www.app.com.pk, accessed 16 May, 2012.

¹⁸ Michael Krepon, "Whose Hands is On the Nuclear Button in South Asia?" Stimson Center, December 3, 2009, <http://www.stimson.org/spotlight/whose-hand-is-on-the-nuclear-button-in-south-asia/>, accessed July 10, 2012.

¹⁹ Amir Mir, "The Real Fingers on Pakistan's Nuclear Trigger," *The News* (Islamabad), November, 16, 2011.

communication arrangements within the NCA and for each nuclear weapon. In the author's view, nuclear C2 for Pakistan is not yet fully developed. Instead, Pakistan has focused on developing its nuclear arsenal.²⁰

To date, the NCA and SPD have not promulgated an official nuclear doctrine.²¹ A few informal and formal operational and declaratory postures give a patchwork view of Pakistan's nuclear doctrine.²² The salient thrusts of such a doctrine include Indo-centric minimum nuclear deterrence, a policy of retaining the option of first-use, foolproof safety and security of nuclear arsenals, and a centralized C2 structure—which includes the option of tactical nuclear weapon (TNW) use. In the absence of an officially declared doctrine, strategic stability between India and Pakistan is beset by hazy conceptions of nuclear responsibility and management at the C2 level.

Pakistan's NCA has no joint Strategic Forces Command headed by a dedicated Strategic Forces Commander. Instead, all three services have individual Strategic Forces Commands under NCA authority, which is exercised through SPD. According to this author's research, a dedicated Strategic Forces Command was apparently resisted by the other services when the NCA was founded. Reportedly, the Air Force and Navy feared that a dedicated single command would go to the Army, hence the other two services insisted on having their separate strategic commands.²³

The most significant weakness of Pakistan's C2 system was exposed on May 2, 2011 when U.S. forces covertly eliminated Osama Bin Laden deep inside Pakistani territory.²⁴ This incident indicated that Pakistan's airspace, command, control, communications, computers, intelligence, information, surveillance, and reconnaissance (C4I2SR) systems were vulnerable to high-tech, territorial intrusion. A nuclear state should never find itself in such a vulnerable situation.²⁵ The May 2011 failure underscores Pakistan's troubled learning curve with C2 and its tendency to focus on arsenal maturation over other problem areas. In the coming decade, Pakistani command system must redress the weakness of Pakistani airspace C4I2SR system.

The Army's influential role in managing the country's nuclear forces suggests that delegation of authority to field commanders could be a delicate issue. Though the Pakistani Strategic Plans have repeatedly asserted that nuclear use authority will remain under centralized control under all

²⁰ For an excellent analysis of Pakistan's nuclear C2, see Bruno Tertrais, "Pakistan's Nuclear and WMD Programmes: Status, Evolution and Risks" Non-Proliferation Papers, No. 19 (July 2012), 7-8.

²¹ For detailed analysis and rationale of Pakistani nuclear doctrine, see companion Chapter 6 by Naeem Salik and Chapter 7 by Sadia Tasleem in this volume.

²² Francisco Aguilar, Randy Bell, and Natalie Black, "An Introduction to Pakistan's Military," published by Harvard Kennedy School, Belfer Centre for Science and International Affairs (July 2011), 36.

²³ This conclusion is based on the author's personal discussion with a former officer from ACDA (SPD).

²⁴ For examples, see Baqir Sajjad Syed, "Pakistan military caught in the crossfire," *Dawn*, May 2, 2011, <http://dawn.com/2011/05/03/pak-military-caught-in-the-crossfire/> and Amir Wasim and Iftikhar A. Khan, "Military offers itself for accountability," *Dawn*, May 13, 2011, <http://dawn.com/2011/05/14/military-offers-itself-for-accountability-2/>

²⁵ Richard Minter, *Leading from Behind: The Reluctant President and the Advisors Who Decide for Him* (New York: St Martin's Press, 2012) speculates that Pakistan military knew about the raid. See Anwar Iqbal, "Obama administration had tacit consent of Pakistan military, claims book," *Dawn*, August 22, 2012, <http://dawn.com/2012/08/23/obama-administration-had-tacit-consent-of-pakistan-military-claims-book>.

circumstances, some Pakistani scholars believed that “even corps commanders would be involved in the decision to use nuclear weapons.”²⁶ Geographical proximity and short flight time of delivery vehicles make delegated control dicey in a volatile region like South Asia.²⁷ There is also the danger that field commanders may make a mistake or panic under stress, increasing the likelihood of nuclear use. Recently developed TNW systems like the *Nasr* have the potential to merge conventional and nuclear conflict. Risks from delegated nuclear control can be mitigated by a clear nuclear use doctrine, well-rehearsed procedures, a balance in nuclear sharing, and a unified strategic nuclear command. Pakistani officials, however, maintain that like all other nuclear weapons, TNWs will also remain under centralized control and not be pre-delegated.

The NCA’s DCC has brought the country’s strategic organizations under the military’s technical, financial, and administrative control. There is a risk that the tremendous civilian technology potential of these organizations in space, communications, metallurgy, nuclear power generation, agriculture, and medical sectors might not be fully actualized under this arrangement. Historically when the military controlled the country, Pakistan’s scientific-technological prowess matured because enough autonomy and intellectual independence was provided, which resulted in the production of nuclear weapons and delivery systems. The military’s handling of these matters prioritizes nuclear weapons and delivery systems over civilian uses of nuclear technology.

Unlearning in the Next Decade: Submission to Civilian Political Authority

The preceding analysis highlights the organizational mindset that has monopolized national security thinking in Pakistan. Nuclear C2 has evolved from this same mindset that considers submission to civilian authority an anathema. Therefore, the bid to control nuclear weapons is actually a subset of a more general problem of an organizational mindset of distrust. This problem has been showcased in the following editorial from the *Dawn* newspaper, written when the then military ruler promulgated an NCA ordinance in December 2007.

Its promulgation at this stage shows the army’s characteristic distrust of the people’s representatives. It also shows that Mr. Musharraf, the retired general, is determined to remain in control of strategic policies and will not delegate any power to his prime minister whoever it may be. Not for nothing did Clemenceau say that war was too important a business to be left to the generals. When to start a war and when to call it off is basically the job of the people’s representatives, and not of the military, whose perception of war is technical and misses the larger picture that a statesman can grasp. It is not a coincidence that both the wars that Pakistan fought - in 1965 and 1971- took place when a military

²⁶ For example, see Z. I. Cheema, “Pakistan’s Nuclear Use Doctrine and Command and Control” in *Planning the Unthinkable: How New Powers Will Use Nuclear, Biological and Chemical Weapons*, eds. Peter R. Lavoy, Scott D. Sagan, and James J. Wirtz (Ithaca: Cornell University Press, 2000), 174. However, the Pakistani system evolved over the decade after this assertion was made.

²⁷ MV Ramana, R Rajaraman, and Z. Mian, “Nuclear Early Warning in South Asia: Problems and Issues,” *Economic and Political Weekly*, January 17, 2004.

ruler was at the helm. Even Kargil was basically the generals' brainchild--notwithstanding President Musharraf's claim that "everyone was on board."²⁸

There will be little learning unless this mindset changes. Since the establishment of two successive democratic governments in 2008 and 2013, a number of tangible changes in Pakistan's socio-political environment occurred that should influence the Army to change its mindset in favor of civilian authority on security issues. This change stems from the peoples' enhanced awareness of national security issues due to a vibrant media, formation of the Parliamentary Committee on National Security, and passage of the 2010 NCA Act, and the 18th Amendment. Judicial activism is another factor likely to establish the prominence of the constitution and civilian authority in Pakistan. Thus, other services should now be able to assert their role in nuclear C2 more meaningfully under democratic rule.

Announcing Pakistan's Nuclear Doctrine

Pakistan has not formally articulated a nuclear doctrine. In terms of doctrinal debate, the tendency toward over-secrecy, opacity, and ambiguity must be reduced. Nuclear capability should have given confidence to the NCA and SPD to frame an overall plan of objectives, actions, and preferences regarding nuclear use. It is perfectly understandable to have declaratory and operational doctrines classified, but an officially declared nuclear doctrine is an essential criterion for having an effective and transparent C2 system at home and for conveying the nation's resolve and redlines to other countries in the deterrence equation. An official nuclear use doctrine would mitigate the risks of a delegated command. Also, the development and integration of TNW would be more orderly and justified if they were an outcome of the country's declared doctrine. The NCA and SPD should seriously consider announcing a nuclear doctrine for Pakistan in the near future.

Establishing a Dedicated Joint Strategic Forces Command

The Strategic Forces Commands represent the third tier of the NCA. SPD exercises operational control on behalf of NCA, but this operational control is diffused because each service has their own respective Strategic Forces Command. This author believes that this diffuse command system must be replaced with one dedicated Joint Strategic Forces Command. In order to do this, the Army may need to change its tendency to view itself as responsible for the nation's defense. It now needs to learn to integrate with the Air Force and Navy at parity. For example, as Pakistan's Navy develops submarine-based nuclear deterrents and the Air Force consolidates its aerospace capabilities, the Army needs to understand the shifting importance of the other two services. The C2 system, which is presently Army dominated, must shift to accommodate this new reality. One method to do this would be through the creation of a Joint Strategic Forces Command rather than rely on three separate

²⁸ Editorial, "Finger on N-trigger," *Dawn*, December 15, 2007, <http://www.dawn.com/news/1070743/dawn-editorial-december-15-2007>. It is important to note that NCA was announced in February 2000. In 2007 it was Presidential National Command Authority Ordinance, which was initiated under the national emergency which lasted from November 3, 2007 until December 15, 2007. All ordinances passed at the time are now legislated under the 18th amendment to the constitution.

service Strategic Forces Commands. This command could be headed by a Navy or Air Force commander, as is the case in many other countries.

Reorganizing Strategic Organizations

Pakistan's nuclear technology must not be limited to solely nuclear weapons and delivery systems as mentioned earlier because there is a significant component to Pakistan's nuclear program. One reason why the military has taken over all responsibilities of control is purportedly to control and prevent the reoccurrence of activities such as those executed by A.Q. Khan. This author believes that this unfortunate incident should not become an excuse for military dominance over all of Pakistan's nuclear programs, military, and civilian. The NCA is revamped, so therefore the strategic organizations, such as SPD, must reorganize themselves. The Pakistan Atomic Energy Commission (PAEC) and Pakistan Nuclear Regulatory Authority (PNRA) should be strengthened to regulate Pakistan's civilian nuclear technology. As is well known, the primary purpose of PAEC is the peaceful development of nuclear technology as well as the development of reactor and fuel cycle technology. The Space and Upper Atmosphere Research Commission (SUPARCO) is responsible for the nation's public and civil space program and related research. Pakistan has a real and under noticed civilian nuclear capability; it should be promoted by making civilian organizations more autonomous.

Building Satellite and Robust Communications Capability

Presently, Pakistan focuses more on nuclear weapons production and the use of traditional early warning methods. However, more attention must also be paid to space-based communication assets. SUPARCO has suffered from financial trouble and neglect. Revitalization, restructuring, reorientation, and modernization of SUPARCO are critical issues. Pakistan will need to catch up with the world's space leaders and make up for lost time. At present, Pakistan controls only two satellites—the Badr-1 digital communication satellite and the PAKSAT-1 telecommunication one. These capabilities are too feeble to ensure robust communications for Pakistan's nuclear C2. The NCA should build adequate space-based satellite reconnaissance and communication capabilities in near future in order to adapt to an environment where its current C2 assets remain vulnerable.

Building Real-Time Surveillance Capability

The May 2, 2011 incident has likely generated psychological dissonance between behavioral patterns and actual reality. It is likely that the positive lessons learned from this incident will be integrated into the building of a real-time surveillance capability. The Pakistani Air Force's strategic tasks of space operations, unmanned aerial vehicle (UAV) development, missile defense, C4ISR, strategic strike, and strategic deterrence should be encouraged. In particular, the Air Force's surveillance, detection, and air defense capability should be built up significantly in the near future.

Build Strategic Community, Involve Universities and Think Tanks

The military alone does not have exclusive intellectual control over strategic and security issues. Others should be involved. Pakistan's strategic community, comprising diplomats, academics, international law experts, journalists, civil society activists, and scientists should be considered as equally patriotic and knowledgeable on nuclear issues. The universities, especially those with departments of strategic, defense, diplomatic and security studies, can be integrated so as to enable research and academic inputs on nuclear issues. The role of independent think tanks is crucial to nuclear learning, debates over nuclear issues, and building awareness on these issues. The Pakistan Academy of Sciences, Nuclear Society, and Atomic Scientists Society could also contribute to issues of nuclear learning in Pakistan.

Conclusion

This paper illustrated the problems of organizational mindsets that enforce exclusivity because they inhibit the creation of effective, balanced, and reliable nuclear C2 structures. The genesis of the NCA and the circumstances in which it was established highlights the Army's preeminence. Various features of Pakistan's nuclear C2 resulted from this mindset. However, there are compelling changes in the overall Pakistani environment that should present enough psychological dissonance for the Army to unlearn and adjust its mindset to accept civilian authority and do more nuclear sharing with other services and society at large. It is important to note that organizational theory is applicable to all militaries around the world. But in countries like the United States, the United Kingdom, or India, the civilian political authority acts effectively to mediate and reconcile the organizational interests of their militaries. In Pakistan, this political mediation and reconciliation is weak; although, things have changed for the better.