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Command & Control of Nuclear Weapons in the Middle East – Key Influencing Factors

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Executive Summary

This chapter analyzes the implications of further nuclear proliferation by states in the Middle East, especially if and after Iran crosses the nuclear weapons threshold, thus signaling the collapse of long-standing nuclear non-proliferation firebreaks established at great effort over the years. The ability to achieve a military nuclear capability will inevitably impact on the strategic behavior of the additional nuclear weapons states in the region, and will induce patterns of command and control (C2), together with Communication and Intelligence issues (i.e., C3I) with regard to nuclear weapons assets, their strategic significance, delivery systems, their security against theft by rogue elements or terrorists, authentication of orders for their operational deployment or readiness, and to prevent unauthorized launch. Each of the states that are candidates for this additional nuclear weapons surge has unique and typical characteristics, though some cross-fertilization of thinking in regard to these issues may occur as one state borrows and adopts at least some elements of another's model – for example, Syria borrowing from an Iranian model of C3I, just to demonstrate the idea, though in reality it may not evolve as such.[1] Additionally, there can be expected to be a cyclic feedback, inside and outside the region, in response to this kind of development, as adversaries adjust to the new reality of multiple nuclear armed players in the region insofar as this may impact on their regional and global interests in terms of security, economics and economic security, freedom of movement in the seas and air, and so on.

Iran has been striving slowly but surely in a manner that will provide it with a nuclear weapons option down the road, by constructing and operating facilities that can produce weapons grade fissile materials, and in developing designs for nuclear weapons. Assuming that Iran does establish an implicit – "ambiguous" – or explicit nuclear weapons capability, it is important to note the following:

- Attaining a military nuclear capability is not an easy task for any state. It is likely to be done against the will of the international community and other regional parties, and it involves political problems, economic and technological challenges, and significant security risks – the complexities of which have so far foiled attempts by Iraq, Syria, and Libya.
- This chapter's analysis attempts to explore the implications of developments the realization of which is likely to last many years. The analysis assumes that the political and the strategic situation that has characterized this region's main foundations for more than a decade will be maintained; however, there is no guarantee that this indeed will be the case. There are strong elements, not only radicals, throughout the region, that are pressing for changes, hence the Middle Eastern theater as we know it today may undergo change. The radical Islamic regimes would be, by definition,

1 A more obvious case would be a nuclear armed Egypt ruled by a radical Islamic regime led by the Muslim Brotherhood (MB) borrowing from the Iranian model – this example is discussed in detail in subsequent chapters.

committed to undermining the status-quo so as to impose their visions of the regional, and global, orders.

- And another methodological remark is that an analysis of the possible implications of a multi-polar Middle East can not be based upon lessons learnt from developments in relations between India and Pakistan, or between the superpower nuclear-related behavior during the Cold War (i.e. rivalry and contest while conducting a dialogue at the same time), and the means that were developed back then to cope with nuclear affairs are generally inapplicable to Middle Eastern crisis environments.

Overview – the Nuclear Middle East

Iran's achieving a military nuclear capability will dramatically intensify regional players' motivation to follow suit, for the following reasons:

- An increased sense of threat: such a development would be perceived as a radical change of the regional balance of power in favor of radical forces, and as a severe threat to the security of states, including to the stability of moderate or secular regimes insofar as Iran is recognized as seeking to undermine the status-quo, or to overthrow it, and change both the regional and the global order so as to reduce the influence of the US and its allies in world affairs.
- Moreover, Iran's acquisition of nuclear weapons will drive home to other regional parties who feel threatened that reliance on US guarantees or extended deterrence – is of limited value, since the US failed to prevent the emergence of the threat in the first place, and thus could not be trusted to prevent the snowballing of subsequent developments down the road.
- Additionally, states in the region may reach the conclusion (following the precedents of Pakistan, North Korea and perhaps Iran) that despite the pressures and the problems of carrying out a decisive policy, it is possible to acquire a military nuclear capability, perhaps even in timelines shorter than ever before. It is important to recall that a few of the region's states have already invested in creating the nuclear intellectual infrastructure; they have scientific and technological capabilities (Egypt, Turkey); and some of them have even made actual moves in order to promote nuclear projects (Iraq, Libya, Syria, Algeria, the UAE).

Clearly, it is very important to ask who the state (or states) that will follow Iran might be. Currently, the possible candidates are Saudi Arabia, or a regime that might replace the Saudi family in ruling the Arabian area, Egypt, Syria, Iraq, Libya, Algeria and Turkey. These states' motivations to follow the military nuclear track are not identical, and each has unique characteristics that will impact on strategy, doctrine, and C3I.

Defense and Security Doctrine

Motivations

The exclusive "club" of states with military nuclear capability provides those states that join it a new level – both actual and image-wise – of deterrence and of sense of security, all of which strengthen the state's and its leaders' status and prestige. A state that strives to achieve a military nuclear capability despite the difficulties, the challenges and the risks involved demonstrates its decisiveness, its belief that it is doing the right thing and its willingness to pay whatever price necessary for this sake.

The past couple of decades have seen four Middle Eastern states attempting to acquire a military nuclear capability:

- Iraq – as part of its quest for the primary leadership position of the Arab nation, especially in competition with Egypt which was accused of "treason" in regard to the Arab cause when it became an ally of the US and signed a peace treaty with Israel, and to satisfy Saddam Hussein's vision as a true successor to Nebuchadnezzar and the mighty Babylonian empire that had ruled the Middle East, defeated the Egyptians, and significantly, conquered Jerusalem (only to be ejected by the Persians, ironically, to invoke the power of history); and also in an attempt to compensate for its basic weaknesses vis-à-vis Iran with which it was involved in altercations, still in the days of the Shah, and then a full scale war after the Islamic revolution, in which Iran proved to be an unexpectedly formidable enemy.
- Libya – not to be outdone by others, and given the eccentricities of its long-time leader, for purposes of Arab prestige and regional and international status, including its presumptions of a role in African affairs as demonstrated by its military involvements in Chad and elsewhere, and as a backup for its sense of security, especially after the 1986 US attacks, while viewing Israel and Egypt as its regional potential enemies or adversaries.
- Iran – Iran has always been viewed by its leadership as deserving of a predominant or even hegemonic regional standing. This was true during the days of the Persian Empire, that defeated and demolished the Babylonian (i.e. Iraqi) empire, and it was true during the somewhat megalomaniacal reign of the Shah. In its present stage, the Iranian nuclear program began in the latter part of the 1980s, during the bitter Iran-Iraq war, in response to Iraq's Weapon of Mass Destruction (WMD) capabilities and programs in the Saddam Hussein era.
- Syria – to remain a leader of the so-called "rejectionist" front of the Arab world, which maintains a fierce refusal to accept what it views as US and Israeli domination and demands, thus in juxtaposition mainly to Egypt that is accused of betraying Arab interests by allying itself with the US and Israel, and to Saudi Arabia that "has sold out" to US interests; and in order to balance its strategic inferiority and its exposure to Israeli conventional strategic attacks, to deter perceived nuclear threats by established potential enemies (the US, Israel,

Turkey, others if they were to go nuclear – Egypt, Iraq or Saudi Arabia, for example); **as well as for reasons flowing from the insecurity of the regime in the domestic context**.

Observing these states' behavior shows, among other things, that:

- The central motivation for the effort to achieve a military nuclear capability has been the desire to acquire an element of deterrence, alongside status and prestige considerations.
- Some of the states involved have had many years of gaining experience in C3 for Chemical and Biological Weapons (CBW), WMD and Surface to Surface Missiles (SSMs) (Syria, Iraq, Egypt, perhaps Libya), and the means to launch them. Despite the difference between nuclear and chemical weapons it is possible to assume that such an experience can at least serve as a basis for planning the nuclear system's C3.
- It is possible to trace many similarities between the regimes that attempted to acquire a military nuclear capability. Beyond the structure and the methods of decision-making, these regimes' actions invariably contain strong anti-Western elements and hostility toward the US, among other things; this is true even for those regimes nominally allied with the US, like Egypt, Saudi Arabia and Turkey, who are inimical to some of the US values and positions, and must watch their more radical domestic flanks and secure them.

Moreover,

- **The motivation to acquire nuclear weapons and the considerations that will guide the operating concept may change over time.** Hence a state whose main motivation to become a member of the nuclear "club" is deterrence might - upon joining that club - **take advantage of the nuclear weapons at its disposal to serve to reinforce and support both old and new ambitions, such as to alter the status-quo in its favor.**
- Such a change is also an outcome of **the need to adapt the security doctrine to the adversaries' changing reality, and to the ways they perceive the threats and risks that a nuclear neighbor wields.** Thus a state that achieves a nuclear capability might motivate its rival-neighbor state to acquire such a capability as well – a development that might have implications over the former's strategic concepts. In other words, a chain-reaction of actions and reactions could be initiated, resulting in a dynamic process of readjustment to escalating realities, scenarios, nuclear arms races, postures, and so on. This would induce an ever increasingly complex C3I picture, as each side attempts to address the challenges posed by adversaries, **including perhaps in frequent demonstrations of nuclear preparedness to press home the strategic advantage of escalation dominance, or to respond to an adversary's attempt to establish it.**
- The ways by which a state reaches a military nuclear capability will affect its operating concept and its C3 methods. For example, a state that acquires a nuclear capability through struggle (perhaps even involving violent expressions), with either the international community or with its neighbors, **will be forced right from the start to develop an operating concept and a C3 doctrine that will provide an appropriate reply for a possible attempt to neutralize or to destroy its nuclear facilities at preliminary stages of the establishment of the nuclear system, on the one hand, and to demonstrate full control over its nuclear assets system so as to assure its rivals-neighbors that there is unlikely to be a "bolt out of the blue" unauthorized attack. The tension between demonstrating a high alert level of preparedness, frequently or on a permanent basis, on the one hand, and on the other preventing hair-trigger situations from getting out of hand, may turn out to be a tremendous challenge to deterrence stability.**

Currently, Iran is continuing its efforts to acquire a military nuclear capability, and this chapter's working assumption is that Iran will eventually achieve such a capability. However, it is also possible that the Iranians will stop at the threshold, a few months away from the assembly of their first nuclear device, so as to be perceived as somewhat responsive to the international community's demands. Iran's behavior will affect the next nuclear state to follow suit. If Iran stops at the threshold, especially in the framework of an international agreement, this will surely impact on following states' considerations. On the other hand, if Iran acquires a proven, declared nuclear capability (possibly including a nuclear test along the lines of the North Korean model, or of the Indian and Pakistani models), the motivation among other states to fall short of going nuclear will significantly diminish.

Generally speaking, the benefits for a state that has acquired a military nuclear capability to adopt a policy of nuclear ambiguity, i.e. tacit nuclear deterrence, are not evident, in spite of the obvious Israeli case, which may be an exception to the rule. The case of the Democratic People's Republic of Korea (DPRK) in this context is interesting: the impression is that there is a reverse correlation between North Korea's progress in the military nuclear track and the quantity and severity of the international threats against it. **A state that develops a military nuclear capability may assume that a proven, declared capability protects it to a great extent from a possible military attack against it, and especially against its nuclear sites. North Korea's and Iran's behavior en route to a nuclear bomb might encourage other states to adopt a similarly aggressive policy.**

A successful acquisition of a military nuclear capability by an Arab state will probably be accepted by the Arab public opinion with excitement and enthusiasm, and the Arab media will present this capability as the "Arab bomb", and as "the ultimate response" of the Arab world vis-à-vis both Israel and Iran, as well as an answer to the US involvement in Middle Eastern affairs which is viewed as excessive, irrational, and exploitative. It is possible that the leaders of an Arab state acquiring military nuclear capability will use this rhetoric to further their standing and prestige, and other Arab leaders will probably follow suit. Even so, and despite all inter-Arab agreements, the absolute and exclusive control over the nuclear weapons will remain at the national particular level; it is virtually impossible to imagine a scenario of a nuclear weapons' partnership, or a conscious entanglement of an Arab nuclear state in nuclear tensions due to deeds or omissions of a third party.

Ostensibly, in a rational behavior scenario it is possible to assume that a state possessing nuclear weapons will be hesitant to get into a coalition with a state/party that might put it in danger of military escalation.

Hence it is likely that a military nuclear capability in the hands of an Arab state will induce it, as well as other parties, to consider all the possible implications for bilateral and inter-Arab defense pacts, both existing agreements and future ones. Nevertheless, one cannot dismiss the possibility that a nuclear Arab state will sign a defense pact with a non-nuclear Arab state, or that the former will at least make a declaratory commitment to put its nuclear capability at the disposal of the "Arab nation", i.e. a variation on classical extended deterrence fashioned for the place, time, environment and contingency. From a different angle, strategic cooperation between a nuclear Iran and an Arab state (or perhaps even Turkey) with a military nuclear capability might be overshadowed by a possible rivalry.

The Israeli Consideration

Except for the case of Syria, and to a certain extent Egypt, it seems that, so far, Israel's attributed nuclear capabilities have not been a significant factor for regional parties' motivation to acquire a military nuclear capability. Saddam Hussein, for example, would most likely have sought nuclear weapons regardless of Israel's nuclear standing, or even regardless of Israel existing at all, for his own reasons. Egypt has adapted reluctantly but well to living with the nuclear dimension attributed to Israel, but could probably not stand for Iran, Saudi Arabia or Turkey going nuclear too without acting to acquire similar capabilities. Most significantly, Israel differs from Iran in its perceived strategic approach and view towards the status-quo: Israel is believed by Arab leaderships to favor the status-quo, and the survival of moderate regimes in the region; while Iran is openly hostile to the status-quo, to US interests in the region, to moderate Sunni Arab regimes that "have sold out" to material values, the US interest, Israel, and so on, and is committed to undermining it (the status-quo) by all means available (including sedition and terrorism, perhaps by nuclear intimidation), and to overthrowing the global order in which the US plays what is viewed by Islamic leaderships, especially Iran's, as an excessive role.

Based upon Israel's past behavior in times of stress (such as, reportedly, during the early days of the 1973 October War), Middle Eastern parties assume that it will consider a projection or maybe even the use of its nuclear capability only under the risk of a military defeat, and the penetration of its enemies' forces of the 1967 borders – commonly called the "last resort" option or capability. Radical opposition figures have alleged more than that, to the effect that Israel has used the nuclear dimension to impose on the Arab regimes its own terms. Israel's conventional military superiority throughout its existence (as well as the nature of its governance, and of its relationship with the US) has to a large extent marginalized the question whether or not Israel might make use of its nuclear capabilities.

Even so, the Israeli nuclear issue has always been part of its neighbors' strategic and operative considerations.

- According to several versions, Egypt and Syria both set limited goals for their armed forces in the 1973 War fearing that achieving even more ambitious goals might embroil them with Israel's nuclear capabilities, and thus planned for no more than a "limited war" aimed at Israel's strategic margins in the territories occupied in 1967, and without threatening the Israeli heartland which might trigger the brandishing of the perceived nuclear "last resort" option. Even in the later stages of the war, with the possibility of looming defeat, both Egypt and Syria refrained from using CW capabilities that were at their disposal at the time.
- Saddam Hussein refrained, despite apparent capabilities, from using CBW warheads against Israel during the first Gulf War of 1991, fearing, so it has been reported, an Israeli nuclear reaction. The threat of Israeli retribution for such an attack was reinforced by remarks made at the time by US Secretary of Defense Cheney. It is also interesting to note that the Iraqi leader refrained during the war with Iran from using CBW WMD in the midst of offensives outside Iraqi territory, though using them extensively against targets on Iraqi territory – in effect adopting the stance of the Arab tribal leader that "what I do in my own tent is nobody's business", thus justifying extensive use of chemical weapons against Iranian troops that invaded Iraqi soil, and the Iraqi Kurdish population that had risen up against him.
- Moreover, there is no doubt that the nuclear capability attributed to Israel, which backups its conventional superiority, has significantly contributed to the transformation in the Arab stance regarding relations with Israel, and largely driven home the futility of continuing the cycle of large-scale conventional wars, at least since 1973.

It seems that since 1973 the need to regain the Golan Heights with the use of force has not been at the top of Syria's priorities, with all the risks and costs that might be involved. Damascus' policy has been quite cautious. Syria's strategic weakness and its susceptibility to Israeli conventional strategic strikes have induced an emphasis upon developing SSMs and CBW capabilities, for both deterrence and to provide a capability for retribution should Israel initiate such actions, in effect attempting to create deterrence stability and even a modicum of escalation dominance in Syria's favor, given that Israel would be very unlikely to brandish its nuclear capability in other than a "last resort" scenario, while being exceedingly sensitive to casualties that might be caused by conventional strategic SSM strikes, and further up the escalation ladder by the threatened Syrian use of CBW agents in either the battlefield or implicitly against civilian populations. Apparently, the Syrians also attempted to develop a military nuclear capability, but were stopped in the midst of the process.

A nuclear Syria, having passed the stages of anxiety fearing it might be attacked on its way to going nuclear, will be very self-confident, sensing that it can deter all its adversaries – mainly the US, which for the duration of the Bush administration was strongly suspected of seeking regime change by force in Syria, following the interventions in Afghanistan, Iraq and Libya, a suspicion that has not entirely waned since the change in Washington following the 2008 elections; as well as, of course, Israel, but also Turkey. Its position in the Arab world will be strengthened, and its leeway will increase vis-à-vis the international community as well.

It is difficult to determine categorically whether or not a nuclear Syria would be more willing to take a risk and try to regain the Golan Heights militarily, assuming that its nuclear capability immunizes it by limiting Israel's response options. It is a possibility one cannot rule out. Arab

strategic thinkers have long posited that an Arab nuclear weapons capability, an "equalizer", would reinstate the natural quantitative conventional advantage enjoyed over Israel, and given the 1973 lesson that quantity equals quality, a nuclear equalizer would allow for the more energetic revival of the conventional military struggle against Israel.

However, rational behavior obligates Syria to act more cautiously, including with respect to the actions of Hizballah and the Lebanese arena. A nuclear armed Damascus might estimate that it can "pull the rope" due to Israel's strategic constraints, which might limit the latter's ability to operate against infrastructure and ruling institutions in Lebanon. In order to "convince" Israel at times of tension and war regarding its willingness to use nuclear weapons Syria might take steps which may include a high state of alertness of the non-conventional systems, emergency deployment, etc. On the other hand, Syria will be guided by a dominant consideration not to cause a miscalculation regarding its intentions in a way that might bring about an Israeli strike against it.

All things considered, and other than the serious but low-probability-high-consequence possibility of nuclear war through miscalculation, it is possible to assume that nuclear weapons in the hands of Middle Eastern states might dictate cautiousness as far as major wars are concerned, but will make sub-conventional wars (i.e. terror, guerilla) more suitable. Nuclear weapons will also necessitate the following:

- Caution during conventional war, especially with regard to the use of strategic SSMs due to the possible misperception that they could be armed with nuclear warheads.
- Letting the adversary know that control over the nuclear arsenal and decisions concerning this arsenal are in the hands of a recognized legitimate leadership (this is definitely relevant to the Syrian case).
- Utilization of means of communication between adversaries, and through third parties, in real time, in order to prevent miscalculations, and to encourage both sides to develop confidence building measures (CBMs).

Force Building

Developing a military nuclear capability, especially an organized system, necessitates investments. It is important to note that no military nuclear power has so far perceived a nuclear weapon as a substitute for conventional power, but rather as a supplement. In the Middle East, conventional power is still perceived as the main support for securing the regime and the state, and for protecting its vital interests, mainly due to the nature of challenges and wars states are facing, on the one hand, and the relatively low flexibility of nuclear weapons and the extreme circumstances in which these weapons can be openly brandished, on the other.

Nevertheless, in recent years there have been some changes in the mixture of strategic and military capabilities in order to better adjust them to current challenges. Syria, for example, has been diluting the armored component of its armed forces in favor of developing CBW, WMD, strategic SSMs and sub-conventional (Hizballah) capabilities. Iraq had SSM delivery capabilities for CBW warheads, as well as air- and artillery- launch systems for them, used against the Iranians and designated for use against US forces in Kuwait, including formidable means for the dispersal of anthrax by Mirage F-1 fighter-bomber earmarked for use against US & coalition forces.

It is our assumption that a state that acquires a military nuclear capability will have to make a substantial investment in establishing an operational launch capability. Regarding SSMs, most of the region's states (Iran, Iraq, Egypt, Syria, Libya, Saudi Arabia) already have substantial capabilities in this respect and some of these missiles have been adjusted to a chemical warhead (Iraq, Syria). SSMs are also easier to control, relatively accurate (in the context of establishing a threat to cities – the SSMs in the region are unlikely to be able to acquire point targets, but armed with nuclear warheads could pose a primitive first strike threat, much as the arsenals of the superpowers did in the early years of the Cold War), and it is relatively more difficult to intercept them, notwithstanding the Ballistic Missile Defense (BMD) systems undergoing deployment by the US and its allies in the region, prominently Israel, which might nullify this advantage. On the other hand, SSMs are more exposed and vulnerable to destruction in their deployed positions – both in storage and in launch sites. Furthermore, it is likely that another state's efforts to go nuclear in this region will put it in a confrontational position vis-à-vis the international system – a development that will jeopardize that state's equipment supply capability, all the more so in terms of crucial aircraft systems.

Therefore, this means that SSMs will probably be the salient platform for delivery of nuclear weapons. In this context it is important to note that:

- There needs to be a rethinking regarding the perception of the use of SSMs as a conventional weapon of intimidation against the adversary's rear due to the risks that emanate from a possible dual use (i.e. the use of these missiles might be perceived as a launching of nuclear/chemical weapons).
- The development of a reliable SSM system that is likely to penetrate possible layers of an increasingly reliable incremental BMD deployment, as this is envisaged developing between now and the year 2020 (according to the 2010 US DoD BMDR Report).

And on another aspect:

- Some of the region's states have invested in developing a diversified chemical weapons' system and in its launching means. Acquiring a military nuclear capability usually does not make such systems unnecessary because they are viewed as basically of tactical, as well as of strategic deterrent, value, and provide flexibility thus broadening the scope of actions leaders are facing.

- The development of an organized, well-established nuclear system demands a long term investment that can last many years, involving budgets and technological (and other) challenges. However, it is doubtful whether a state (or states) in the region that acquires a military nuclear capability can over the long run settle for a sparse, mainly symbolic disposition of nuclear capability. A transformation in the way the threat is perceived can have an impact on the

scope of investments required in building a nuclear system.

C3I Issues

When nuclear weapons aspirant states in the region acquire the wherewithal of the salient assets, there are several factors that will influence the way in which the C3 frameworks will be established, and their characteristics, quality and nature. These are – the political culture of the state; the structure and the nature of the regime and the leadership; the external (and domestic) threats that the state faces etc.

Each of the states in the Middle East has its own characteristics: Turkey has so far been the most democratic; in Iran there are some democratic elements integrated within an autocratic regime led by religious leadership; the Saudi regime is a patrimonial family rule system, etc. **However it can generally be said that in the Arab world, there does not exist an organized and systematic decision-making process (though outwardly, the Arab states make efforts to present a formal and legal process of this kind), and there does not exist a built-in system of checks and balances, and of consultation. The head of state, usually the "President" (who sometimes serves also as the "Commander of the armed forces"), the *Ra'is*, has an almost absolute monopoly on military power and the use of it, and he is certainly not interested in sharing with others decision-making, or to allow establishment of restrictions on his authority.** He usually relies on, and is assisted by, relatives and close advisors. The leader plays among the various power foci (persons as well as systems), creates rivalries, competition for authority and redundancies in tasks and functions, and strives that no one will have the "complete picture". The purpose of all these is to prevent the danger of accumulation of substantial power in the hands of ambitious subordinates. The Vice President, if this function does exist at all, usually lacks real power, and he and other functionaries – political or bureaucratic – their functioning and operation depend on the good will of the leader.

In the Middle East, traditionally the military is, then, the main source of support and backing for the regime's security and even survivability; in modern history, it has also provided the state with its leaders, which grew within its ranks (Egypt, Syria, and Libya). However, in the course of time, and in order to neutralize the monopolistic control of the military, and to balance its influence, the leaders in Middle Eastern states have established parallel regime-sponsored force systems, dedicated to secure the regime and tighten the control over the armed forces through a network of intelligence and security apparatuses. The establishment of parallel special and favored security forces, and separate armies that marginalize the established security and armed establishments, and are entrusted with "special" missions high on the regime's ideological agenda – is a trademark of authoritarian regimes, and twentieth century examples abound, from Nazi Germany to the Soviet Union to Romania to Haiti. Thus, the Islamic Revolutionary regime in Iran established the "Revolutionary Guard" (IRGC), to supersede the influence of the military which was a creation of the Shah. Even before the revolution in Iran, Syria and Iraq established the "Republican Guard", and Saudi Arabia established the "National Guard". Anyhow the head of state is deeply involved in all key nominations inside the organizations that are in charge of security and regime survival. **Most of the high ranking officers in these organizations primarily "specialize" in loyalty to the regime, and they come from the "appropriate" background (community, sect, family, ideological hotbeds). Some of them are bound by family links or parochial background to the ruler, and they all share the same interest – the survival of the regime.**

As far as we can judge, nothing in the political and religious culture of Middle Eastern states prevents them from acquiring military nuclear capability, or from using it, if circumstances demand. On the other hand, it is important to note that in their political and religious culture, certainly there is nothing that obliges them, or even empowers them to make a decision to activate this ability, or justify the sacrifice of the lives of hundreds of thousands of people, and to severely harm, for a long period of time, the state's ability to function.

Indeed, the sacrifice concept, certainly that of an individual, exists and is even highlighted, in various streams of Islam. In fact, the believers are exhorted to sacrifice, since there can be no victory without it. This concept, together with the relatively low "value", at least in Western terms of the nominal "sanctity" of human life that is foreign to Islamic beliefs insofar as those engaged in Holy War are extolled to accept sacrifice as a positive value on the road to victory, and a subjective sense of "justified action", could push a leadership that is motivated by sense of religious mission – to take greater risks. However, looking at the modern history of the Middle East (including Iran), it is hard to point to even one case where these motivations were not restrained by pragmatic considerations of "*Realpolitik*". At least theoretically, one can not exclude "irrational", or "irresponsible", behavior scenarios, by a ruler in the Middle East, or by personnel of the nuclear weapons C3I organization. Perhaps even more dangerous than outright irrationality is the prospect of miscalculation, through ignorance, disdain for the adversary as representing an "inferior" culture, or due to human frailties – stress, fatigue, anger, misunderstanding, misperception, misinformation, or other factors too numerous to mention diplomatically (stupidity, cognitive dissonance, wishful thinking, obstinacy, mental quirks, the effects of medication or drugs, etc.).

From what could be gleaned[2] from the behavior of Middle Eastern states concerning the development and the use of CBW WMD, it appears that in all these states, the rulers did not rely on the organized military, but preferred to establish a designated force to be in charge of them, under direct supervision of the ruler himself, and through his close and veteran loyalists. The decision to activate this weapon is exclusively in the ruler's hands, and the execution of the decision has been delegated to the field commanders on the scene. This was the case when Iraq used chemical weapon against Iran (on Iraqi territory only) and against the Kurds ("Chemical Ali"). And this was the case when Iraq launched SSMs against Israel, Saudi Arabia, Kuwait and coalition targets during the first Gulf War of 1991.

The issue of delegation of authority to launch WMD assets, especially nuclear ones, in case of disruption of the primary C3I channels or incapacitation of the leadership, is a complicated one, discussed in the case studies here examined. Whether such authority would be delegated for "Plan B" contingencies at all, and if so – how, is a matter of much speculation, and there are very heavy considerations involved that bear on questions of the security of nuclear assets. We can not even say for sure whether Saddam Hussein would have applied to nuclear weapons assets the rules that he is alleged to have applied to

2 Alarmingly, this became known only after the collapse demise of the Soviet Union in 1991, when the Soviet archives were opened.

CBW and SSM assets, in terms of delegation of authority to initiate their use to field commanders in case of disruption of C3I channels or incapacitation of the leader – he might have, or he might not have. We do know that Soviet field commanders were authorized to initiate the use of tactical nuclear weapons in the battlefield – as distinct from strategic nuclear weapons systems against the "Contiguous United States" (CONUS) – in case of hostilities in the European theater during the height of the Cold War, and, alarmingly, in Cuba in 1962 the use of Frog rockets armed with nuclear warheads, again only in a tactical nuclear scenario, not as regards strategic nuclear weapons.[2]

Comments

Concerning the Arab World, it can surely be assumed that the ruler of the nuclearized state will preserve full and exclusive authority in his hands, in all issues related to the nuclear system – its establishment, including C3I aspects, and its activation. He will not allow any restrictions on his decisions, or co-partnership in decision-making. From *his* point of view, this might give strength and prestige to a potential candidate who will strive to replace him. Exceptional is a relative who is designated as a successor (such as a son – Syria, Egypt and Libya come to mind), or family arrangements like in Saudi Arabia. Beyond the need to balance power within the leadership, the drive to retain absolute and complete control of the nuclear assets derives from additional considerations:

- An interest to reduce miscalculations and potential complications;
- Constant fear that the nuclear weapons assets will fall into the hands of opposition elements who strive to undermine the regime (like the "Muslim Brotherhood" in Egypt), or renegade or rogue elements within the ruling system;
- The need to appease an adversary country, or the international community, in order to avoid unwanted reactions. This, by signaling that the nuclear weapons assets remain in legitimate and "responsible" hands.

In the first stages (which are in their nature "sensitive" in particular) of the establishment of the military nuclear capability, the facilities, the apparatus and the procedures will probably be quite primitive. However it is likely that as time passes and the nuclear system and the "learning curve" develop, the regime will establish more satisfactory, and more sophisticated frameworks and procedures with regard to the security and C3I concepts applied. This, *inter alia* - to pacify opponents and the international system. It is likely that superpowers will offer to assist in procedures and technical means, but it is doubtful whether and to what degree the local parties, radicals in particular, will be open to adopting Western procedures and technology; we can not rule out the possibility that they will be assisted by countries like the DPRK or Pakistan. All this, while striving to minimize exposure of procedures and technology, and in accordance with the structure and the nature of the regime and the ruler.

It is worthy of mention that in each stage of the decision making process, i.e. authorization and authentication – there are substantial challenges to deal with, and inadequate solutions could lead to miscalculation. Some challenges to be considered are:

- The governmental culture and tradition in the Arab world: this culture does not encourage freedom of expression, and there is a phenomenon of self deprecation versus the "ruler" – the paterfamilias, he who is the supreme authority. The result is that there is no scrutiny, no real debate, no collective brainstorming, probably little participation of professional echelons with the intellectual wherewithal and the technical expertise required to make well-considered and balanced choices in brinkmanship crisis environments, and no structural mechanism of consultation. Dissenting opinions have no chance to be heard, and when they are raised, the one who raised them may be punished. You simply do not contradict the opinions, or question the orders, of an authoritarian leader, unless you are in an especially privileged position (a son designated for succession, for example); disagreeing openly could be life-threatening, or at least career-threatening. This phenomenon could impact the nature of the management of nuclear brinkmanship crisis environments between two or more parties or states, and decisions whether to brandish, or to launch, nuclear weapons.
- Moreover, information that reaches the salient decision-making leader may be manipulated by interested parties, or to "soften" bad news that could make the leader rile at its carrier. There is a very deep and disturbing record of false reporting in crisis situations in the Middle East (perhaps not only in the Middle East, but that is beside the point), either due to self-delusion by reporting ranks, or a tendency to wildly exaggerate good news, or due to outright fear of the consequences of truthfully reporting bad news. This is a very worrying gap when considering the potential for catastrophic miscalculation by a decision-maker in a nuclear brinkmanship crisis environment.
- The composition of the leadership and the absence of a designated "Number Two". In Egypt, for many years there is no one who has been regarded as Number Two, although recently Gamal Mubarak is an obviously designated successor and deputy to his father, who appears to be moving inevitably towards a termination of his long rule, and Seif al-Islam in Libya similarly. In Syria, the deceased Bassel al-Asad was a clearly designated successor until his demise in a road accident, while his brother Bashar was away in Europe practicing medicine, but after Bassel's death he too was brought it to the close circle of the *Ra'is*; today, there are vice presidents, but their political weight is negligible, and they are not regarded as real "Number Twos". Our assumption is that rulers will hesitate to delegate to anyone else a similar authority over nuclear C3 assets and weapons. **The meaning of this is that if Libya, Egypt and Syria become nuclear states, it is unlikely that there will be a "double authentication" mechanism.** However in (democratic) Turkey, Saudi Arabia (arrangements within the family) and in a "new Iraq" – these may be devised.
- **The historical record is dire, and dismal: failures in collecting, filtering and processing information in the Arab world – have led to severe, sometime catastrophic, miscalculation regarding the adversary's intentions**

and steps. There is no intelligence tradition, in Western terms. The local culture encourages almost blind trust in what appears in the media, **and in unfounded conspiracy theories. The reactions reflect in many cases an unrealistic reading of developments, and they indicate that the information "filters" do not work well enough. Intelligence has been manipulated by interested parties, deliberate misinformation and disinformation is rampant, foreign elements have warped the perceptions of regional leaders (as did the Soviet Union in May 1967, when it convinced Nasser that Israel was about to attack Syria, which was entirely unfounded), and actions and reactions have been based on popular lore and myth rather than on reality, to a disconcerting degree.**

- The issue of intelligence and information, i.e. a correct reading of the adversary's intentions and steps is critical, particularly in a nuclearized Middle East. In order to get the needed intelligence, it is likely that various states will ask for assistance from third countries, but fundamentally they will try as much as possible to act on the basis of the national and autonomous information capabilities. There is doubt if the Middle Eastern nuclear weapons states will develop the same pattern of communicating adopted by the US and USSR during the Cold War. But they might adopt other confidence building measures (CBMs).
- The Middle Eastern states, in general, lack the required technologies and expertise to safeguard nuclear weapons assets, such as Permissive Action Links (PALs), to authenticate commands and prevent unauthorized use. They also lack the cultural basis to induce thinking and practice regarding the ramifications of the possession of nuclear weapons assets; however, reality can be expected to foist a learning curve about all related issues, so as to retain a crucial degree of stability in an anyway excessively volatile region. The question is, to a large extent, how long such a "learning curve" might take to establish procedures and the wherewithal to secure deterrence stability, and whether catastrophic miscalculation might not precede it.[3]

Problematic scenarios

There are several scenarios which might challenge the "rational behavior" assumption, with regard to nuclear weapons. The almost monopoly that the ruler of the state has on the main decisions and on the executive branches; the obscurity of the "Number Two" in the leadership; and the possibility that the ruler will hesitate to develop such procedures that will oblige him to share his decisions with others – all these lead to the following scenarios. **It must be emphasized that most of the problematic scenarios do not necessarily characterize the Middle East alone, but the problems in this region are amplified because of the regime's structure, religion, and other traditional culture elements that are dominant, and may block the infusion of more sophisticated concepts, ways and means to make nuclear C3I stable, reliable, and less threatening. Otherwise, first strike and preemption will become the order of the day, and deterrence stability will be virtually absent.** The following are possible scenarios:

- A governmental vacuum that follows a sudden death of a ruler, either during a war or during a tense situation, or as a result of it.
- It is interesting to note that Saddam Hussein, in spite of his cruel manner of ruling, was relatively cautious with regard to the use of chemical weapons against Iran and Israel. Unfortunately, Saddam's caution was negated by his tendency to miscalculate, and misperceive the resolve of adversary states, like Iran, and then the US. **Thus he became, in fact, a gambler taking undue risks without being aware that he was doing so. This is a very worrying precedent, and whether a nuclear weapons environment can induce changes to long-standing and deep cultural inclinations, is an interesting question, with no clear evident answer one way or another.**
- The rise of an extremist or fanatic religious ruler, either following a coup or another kind of seizure of the regime, by a religious group (like the "Muslim Brotherhood"), or following a process of religious radicalization of a ruler. A regime that is heavily influenced by a religious hierarchy may not necessarily be irrational in its reference to nuclear weapons. However, it will be impossible to disregard the possibility that religious motivations and perceptions do increase the chances for manifestations of a slanted rationality, which might posit that the use of nuclear weapons to attain victory would be permissible.
- A crisis in the C3 channels, following deterioration in the political stability; penetration of radical elements of the chain of command; an attempt of a rogue or renegade element from within the system to seize power; and as a result of a war.
- **Domestic pressures to use nuclear weapons against an enemy, following a defeat in a conventional war and massive damages to population or infrastructure, or following a behavior of an enemy that stimulates much anger inside the state – thus forcing the hand of a regime that might come to view its survival as threatened from within due to its perceived capitulation to a reviled adversary.**

3 Thomas Schelling has suggested that it might take an Iranian leadership a decade or so to gain a reasonable understanding of the complexities of being in possession of, and managing, a nuclear weapons arsenal. Schelling points out that it took the United States and the Soviet Union two decades to thus establish mutual deterrence stability. Needles perhaps to add, the states of the Middle East are fundamentally, culturally, different from the US and the USSR, and emotions and antipathies, crises and conflicts, are perhaps more shrill, even than was evident in the early years of the Cold War.

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