Saddam Hussein's Nuclear Vision

An Atomic Shield and Sword for Conquest

Norman Cigar

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Dedication

This study is dedicated to my wife, Nidhal, who has just returned from service with the U.S. Army in Iraq.

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Executive Summary

This study examines why Saddam Hussein pursued nuclear weapons and, as a basic aspect of that question, how he might have employed that capability had he acquired it, whether for deterrence, warfighting, or something else. As the key decision maker in Iraq, Saddam's own thinking was central. His perception of regional threats, primarily from Iran and Israel, were a prime motivator. In addition, Saddam viewed acquiring nuclear weapons as a potent vehicle to help legitimize his regime and burnish his personal image as leader both at home and in the Arab World, as a modernizer and defender of national interests. A better understanding of the Iraqi case can also clarify the enduring issues related to how regional leaders may view nuclear weapons in this world of looming proliferation.

The West often tended to assume that if Iraq ever acquired this capability, it would have adopted a posture similar to that which had characterized the theory and practice of the superpowers during the Cold War, resulting in a more stable mutual deterrence. However, rather than viewing nuclear weapons as a stabilizing factor through strategic deterrence, Iraqi thinking suggested a potentially destabilizing approach, given the intent to change the status quo and the balance of power in the region. Iraqi thinking on deterrence entailed a far from benign "aggressive deterrence" by providing a shield for a more assertive—and potentially very disruptive—policy beyond Iraq's borders. Iraq also perceived that nuclear weapons had a warfighting role, in addition to a deterrence role, with nuclear military doctrine developed even at the operational level. Iraqi military doctrinal publications and operational documents from the 1980s, developed with the anticipated imminent acquisition of a nuclear weapons capability, contain the distilled rationale, assumptions, and real-world preparation for Iraq's development, force integration, and use of such weapons. Moreover, the Iraqi regime's threshold

for use of such weapons seems to have been considerably lower than conventional wisdom posited (at least in regional conflicts).

The Iraqi case first highlights the risk of mirror imaging another country's perceptions and intentions, especially in the realm of nuclear weapons, where there are limited historical precedents. Understanding a leader's worldview—especially in authoritarian political systems where decision making may be highly personalized—is key to evaluating the perspective and potential behavior of an actual or would-be nuclear power. Second, and related to the differences in leadership and strategic culture, the Iraqi case indicates that first, the concept of nuclear deterrence and its relationship to stability needs to be revaluated in general in a less absolute—and less optimistic—direction and second, that it cannot be applied mechanistically. As seen from Saddam's thinking, leaders of emerging nuclear powers may conceptualize deterrence not only in a purely defensive mode, but also as a shield permitting greater aggressive activity at a lower level on the assumption that escalation to nuclear war may be controlled and an adversary's nuclear arsenal thus neutralized. Third, an assumption that nuclear weapons would never be used in a warfighting mode may be flawed. The result could well be the actual operational use of such weapons, especially against an adversary who was not similarly armed. Fourth, even a small nuclear arsenal in the wrong hands can be sufficient to cause significant negative consequences for U.S. interests. Given Saddam's perceptions and political objectives, Iraq's initial acquisition of even a few nuclear weapons could have had a disproportionate impact on U.S. interests and on regional stability. Finally, modifying the regional threat environment may alleviate the pressures for proliferation. What can be done in this case is to remove or diminish the sources of perceived insecurity that can magnify threat perceptions and serve as a potent stimulus to fuel further proliferation. This may reduce or at least slow down, if not eliminate, further proliferation.

Overall, this study suggests that any trend toward nuclear proliferation could contribute to destabilizing effects—as was the case with Iraq—and argues for the desirability of continuing vigorous international efforts to halt or slow proliferation.

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Introduction

The intent of this study is to clarify why Saddam Hussein of Iraq wanted to acquire nuclear weapons. His regime never did obtain this capability despite its long-standing intent and concerted efforts to do so; to that extent, discussions about its outlook on this topic in a way remain theoretical. Nevertheless, Iraq certainly came close enough to reaching its goal, as apparently it was well on its way to doing so had the 1990–91 Gulf War not intervened. Moreover, apart from the interest in evaluating a key aspect of Iraq's recent history, there is also broader merit in understanding the enduring issues related to how regional leaders may view nuclear weapons in this world of looming proliferation.

Of course, as National Defense University professor Gawdat Bahgat has noted, "Each state's experiment with nuclear weapons is unique and reflects domestic, regional, and international dynamics at specific times."[1] Given the personality-dominant systems which often govern in aspiring nuclear countries, one may well encounter idiosyncrasies in behavior in each situation. However, case studies such as that of Iraq can provide useful insights into shared thinking about the perceived utility of nuclear weapons in such situations and can help refine the relevant questions to ask when evaluating how a given leadership might be thinking about nuclear weapons development, acquisition, and use.

The debate has been long-standing between the "optimists"—those who see the spread of nuclear weapons as a potentially stabilizing factor through the resulting implementation of a strategic balance that mutually deters potential adversaries—and the "pessimists"—who, on the contrary, view proliferation as destabilizing and raising the risk of a nuclear confrontation. An inherently related issue is whether states view nuclear weapons as a doomsday weapon to be used only as a deterrent or also as a potential warfighting tool. This study will argue that Saddam Hussein

perceived nuclear weapons to be useful as both a deterrent to enemy attacks and as an offensive tool, as well as a source of prestige.

The Terms of Reference

Scott Sagan has provided a useful approach to understanding why states acquire nuclear weapons by identifying three main motivations or models: as a response to foreign threats, as a result of domestic political and bureaucratic dynamics, and as a symbol of a state's modernity and identity. Elements of this taxonomy will be utilized in the ensuing analysis, including how these general factors applied specifically to Saddam Hussein's Iraq and to the potential consequences for stability and security in the region.

From that perspective, the context of a specific situation and how a state might view the optimal use of these weapons is central to understanding the potential application of a nuclear capability. This study will address Iraq's perceptions of nuclear weapons, focusing not only on the stimuli behind their development but also on Iraq's perspectives on nuclear strategy. This may serve as a guide to assessing how the country's leadership might have envisioned the use of these weapons. Ultimately, a better understanding of these issues may help establish some lessons learned that could also be applicable in analysis and policy making on nuclear proliferation elsewhere.

The issue of Iraq's pursuit of nuclear weapons needs to be approached on two separate levels. One is Saddam's perception of the need for and utility of nuclear weapons in dealing with threats and his geopolitical environment. This is unavoidably related to the second, an analysis of how Saddam might have actually used such a capability.

Saddam's Hussein's Nuclear Vision

Saddam himself has to be the focal point and the key level of analysis in understanding Iraq's pursuit of nuclear weapons in light of his centrality in the nation's authoritarian system. Possibly even without Saddam, Iraq might well have sought to acquire nuclear weapons, as has been true of a number of its regional neighbors, such as Libya, Syria, Iran, Egypt, and Israel, with varying degrees of commitment and success.[2] Nevertheless, without Saddam's driving force, vision, and commitment of resources, Iraq's nuclear program might have taken a different course even in light of enduring geostrategic factors.[3] His commitment to nuclear weapons, in fact, was so consuming that he had promised Jafar Diya' Jafar, then director of Iraq's nuclear program, to build a solid gold statue of him as a reward if he succeeded.[4]

One can argue as well that Saddam's paradigms and decision-making style, at the same time, drove Iraqi strategy and thinking on nuclear weapons. It is hard to overestimate his personal impact, given a political culture in which he was accepted as the reference point and validating factor for all decisions and discussions on national strategy and security. His pronouncements were treated as definitive and quoted on all occasions, leaving practically no room for open debate on general goals, although on nuclear weapons, one can posit that a perceived need for a nuclear deterrent was not limited to Saddam but was probably a more genuinely broad-based general perception of the Iraqi political class and public. When speaking of "Iraq" in this study, implicitly the reference will most often be to Saddam, as the key decision maker not only in the nuclear program but on national security matters overall.

At the same time, of course, the concentration of power in Saddam's hands and the narrow nature of the political circle around him makes penetrating many aspects of thinking about Iraq's nuclear weapons particularly difficult.

The Historical Database

Reconstructing Iraqi thinking on nuclear weapons remains far from easy even today. With the fall of the Saddam regime and the end of that country's nuclear program, to some extent, more information has become available about Iraq. Under the circumstances, in fact, one might expect to have available all the information necessary to understand the question of Saddam's intentions thoroughly, yet the relevant database remains incomplete. While Saddam and most of the players in the core decision-making circle around him were arrested and questioned, even the interrogations of the principal figures did not yield complete responses in this regard. In fact, no one seems to have asked Saddam about his thinking on the potential use of nuclear weapons. The monumental report by the Special Advisor to the Director of Central Intelligence on Iraq's weapons of mass destruction (WMD)—often known as the *Duelfer Report* after its main author, Charles Duelfer[5]—provides some valuable information on this score, but its main focus was on the mechanics of the development and possession of Iraq's WMD rather than on strategy. Moreover, Saddam's regime operated in this arena largely in verbal, rather than in written, form and of the relevant documents that did exist, many have since been destroyed.[6]

One can point to no single national Iraqi strategy document, whether classified or not, in which the role of nuclear weapons is fixed. Neither is a systematic official record of Iraqi thinking on nuclear weapons discussing their potential employment readily available. This is not surprising, given Iraq's secretive system where Saddam's intent was often unclear even to subordinates close to the center of power, where open debate was nonexistent, and where any public statements on this issue were studiously opaque. While in power, Saddam revealed little about his thinking on nuclear weapons, as was also true of his immediate entourage, and their perceptions often have to be inferred from their limited public and private statements and policy decisions.

Nuclear strategy can be developed in different ways. In the United States, for example, civilian experts were largely responsible for developing doctrine in the

early days (especially at the strategic level), while in the Soviet Union this was largely the preserve of the military, with the Communist Party setting the political-military parameters.[7] In Iraq, a systematic effort to institute a discussion process on nuclear strategy and doctrine seemed to be missing, at least above the theater-operational level, although some discussion at least within the military must have taken place in order to draft the doctrinal manuals that were produced.

Despite Saddam's dominant presence, other actors would also have had an input into some aspects of the country's emerging nuclear strategy or would have been privy to insider information because of their access. Iraq's scientists, of course, were intimately involved in the nuclear program, although essentially in the technical rather than the policy aspects related to how these weapons were to be used. These scientists have often been very forthcoming in their memoirs and interviews, and their access to the country's policy makers, however limited, provides useful insights on the latter's thinking.

The Iraqi media—whether the military media or the Ba'ath Party–dominated civilian media—is a useful source, not so much for any hard information one can glean from it as for being a reflection of the general atmosphere and the broad parameters of the political context. Very often, discussions in the media were cast in surrogate terms, with arguments made about other nuclear and would-be nuclear powers which, however, would also illuminate Saddam's thinking.

Only with the Iraqi military is somewhat more abundant—though still limited—material available, with operational and doctrinal documents providing rare glimpses into Iraqi thinking. Indeed, the Iraqi Army even produced a doctrinal manual on how to employ nuclear weapons at the operational level. The military documents and scattered writings in official periodicals—captured during the 1991 Gulf War and subsequently declassified—are especially valuable, despite their own limitations, as not everything was committed to paper, preserved, or collected. While the Iraqi military was perhaps not privy to the thinking of Saddam and the inner leadership circle, the need to enable training and planning inevitably would have stimulated thinking and discussions within the military to generate shared

doctrine, however preliminary and theoretical in many aspects it might be, and to understand and prepare for the effects of nuclear weapons on the battlefield. And, it would have been the military—given its professional expertise—that would have been tasked eventually with implementing any nuclear strategy, no matter who would have had the lead in developing or drafting it. Here, too, however, there is no record of any discussions or debates.

Ultimately, our factual database on Iraq's thinking about nuclear weapons is not likely to expand greatly. Barring new revelations by former regime insiders or the release of additional documents to the public, any analysis of the nuclear thinking in Iraq must rely on consolidating an array of piecemeal information, with many unavoidable gaps.

Nuclear Weapons and the Threat Environment

Saddam and Iraq's Enemies

Focusing on Saddam's own perceptions and projections is fundamental, given his decisive role in Iraq. Understanding his view of the threat environment can help us understand his motivation behind the pursuit of nuclear weapons and, to a certain extent, also how he might have envisioned using a nuclear capability. In their perceptive study, Jerrold Post and Amatzia Baram have characterized Saddam as having a "paranoid orientation," that is, seeing himself surrounded by enemies. With an Iraq wedged between two powerful and hostile neighbors— Iran and Israel—conflict was almost inevitable from his perspective.[8] Iraq had a long history of confrontation with Israel, having participated in virtually every Arab-Israeli war, even if only with limited forces, and Saddam was a strong supporter of the Palestinian cause.

Likewise, Iraq experienced a stormy relationship with Iran, fueled by border friction, competition for influence in the Persian Gulf, and tensions stemming from the interpenetration of ethnic and sectarian communities in the two countries, culminating in the Iran-Iraq War of 1980–88. Perhaps not surprisingly, in light of the regional situation—according to Tariq Aziz, a senior official

throughout Saddam's time in power—Saddam saw nuclear weapons as a vital element of Iraq's defense policy: "He wanted nuclear weapons to guarantee his legacy and to compete with powerful antagonistic neighbors; to him, nuclear weapons were necessary for Iraq to survive."[9]

The original impetus for Iraq's embarkation on the nuclear quest seems to have been a perceived need for deterrence to parry these regional threats in the form of an existing Israeli nuclear capability and what was feared to be an incipient Iranian one beginning in the days of the Shah. Which of these perceived threats—Israel or Iran—served as the predominant initial stimulus and subsequent focus of effort is debatable, however.

In retrospect, individuals who were privy to the thinking of the country's leadership are still divided in this respect. In the view of one nuclear scientist, Imad Khadduri, for example, Iraq's nuclear weapons were to be used mainly as a deterrent against Israel, even during the Iran-Iraq War. He notes, "this was confirmed to us during brain-storming sessions . . . led by Humam Abd Al-Khaliq at the Iraqi Nuclear Energy Agency's sessions while we heard Iranian rockets falling close by."[10] Another nuclear scientist, Asad Al-Khafaji, for his part, believed that Saddam's intention was really not to use nuclear weapons against Israel, despite what Saddam had said on occasion, but rather against Iran, the other Gulf countries, and even against dissident Iraqis.[11] Based on official statements and media coverage, one could safely conclude that both threats played a significant role.

Iran

Staff Major General Wafiq Al-Samarra'i, who eventually became chief of Iraq's military intelligence, contends that Iraq's nuclear program had been spurred by that of Iran.[12] While an Israeli airstrike put Iraq's reactor at Osirak/Tuwaytha out of commission in 1981, Iran clearly also saw the same reactor as a direct threat to itself and had previously launched ten airstrikes against it, with only one being even partially successful.[13]

The state-controlled Iraqi media, for its part, no doubt reflecting Saddam's concerns, devoted as much attention to the potential Iranian as to the actual Israeli nuclear threat, highlighting one or the other at certain junctures depending on the current situation. In fact, Iran's nuclear threat remained an abiding concern for Baghdad even after Iran had been defeated in the Iran-Iraq War. For example, under a heading entitled "Nuclear Weapons," a 1990 assessment by the Iraqi Army's Chemical Directorate expressed concern that Iran might acquire a nuclear reactor from Hungary or Rumania.[14]

One Iraqi journalist, who ascribed aggressive intentions to Tehran, typically fretted that the latter might acquire support for the development of nuclear weapons from the newly independent Central Asian countries and asked rhetorically, "Has the Iranian regime's mind weakened to the point that it has also forgotten its bitter and costly experience during the eight-year war?"[15] Saddam was to feel particularly vulnerable after the crippling effects of the Gulf War and its aftermath on Iraq's nuclear program, especially as he perceived Iran as still intent on acquiring a nuclear capability of its own. Iraqi observers even imputed an alleged United States silence on Iran's nuclear intentions as a means of rewarding the latter for having supported the Shi'a revolt in Iraq in the wake of the Gulf War.[16]

Israel

At the same time, Iraq was also worried about Israel's nuclear capability, as reflected by the significant preponderance of writing about the latter by the late 1980s. This was not surprising, since Israel already had nuclear weapons and represented an actual threat, as well as being engaged in an escalating confrontation with Iraq by 1990. Indeed, Israel's possession of nuclear weapons in and of itself came to be seen in Baghdad as more than sufficient justification for Iraq to pursue the same path.

A premise of a justified symmetric response seemed to have acquired permanent validity, and even elicited open support in unguarded moments in public or in closed circles. According to Saddam, for example, "I believe the Arabs have the

right to possess any weapon which their enemy has."[17] This sense of entitlement remained deeply seated, as illustrated by Iraq's Minister of Culture (and former head of the Iraqi Nuclear Energy Agency) Humam Abd Al-Khaliq's response, when asked in 1998 about the impact of Pakistan's newly announced nuclear weapons: "They have nothing to do with the objectives of the Arab nation. I believe that the only weapon that can serve the Arabs in their confrontation against the expansionist policy of the Zionist entity and the threat posed by its arsenal of nuclear and strategic weapons is their own weapon."[18]

Did the Osirak Airstrike Trigger the Military Nuclear Program?

It is impossible to pinpoint any single defining event in Iraq's relations with Israel or Iran which would have spurred Saddam to embark on the road to nuclear weapons. Conventional wisdom identifies the Israeli airstrike against the Iraqi nuclear reactor which the French had installed at Osirak in June 1981 as the catalyst that supposedly induced Saddam to begin a military nuclear program. According to this view, he was motivated to do so out of frustration with the thwarting of Iraq's peaceful nuclear program and the perceived need to develop nuclear weapons as a shield to protect such a peaceful program in the future. Some Iraqis have also promoted this thesis.[19]

However, the old Soviet government, for its part, had harbored suspicions all along that what Iraq really wanted was an atom bomb. Early on, the Soviets articulated a policy of not providing any support in the nuclear field that Iraq could have diverted to military purposes when the latter approached the Kremlin for help. Even at the time of the first nuclear bilateral deal in 1959 when Iraq received a small reactor, Soviet Premier Nikita Khrushchev reportedly had warned his subordinates, "First the Chinese, and now even the Arabs are asking for a bomb. In the final analysis, it will come back to haunt us. Go ahead, cooperate with them, but don't give them the bomb!"[20] When Saddam, then still vice president, visited the Soviet Union in 1975 seeking a more advanced nuclear reactor, Moscow insisted that international controls be made a condition for any new equipment,

whereupon Saddam apparently demurred and no deal was reached. After this unsuccessful visit, the Iraqi government turned instead to France for help in this domain.[21]

Moreover, there are indications that a weapons-oriented effort, or planning for such an effort, had already been in the works prior to the Osirak airstrike. Nuclear scientist Husayn Al-Shahristani, for example, identifies 1979 as the turning point, as that was the year Saddam assumed power and realigned the efforts of the nuclear program from a peaceful focus to a military one with the establishment of a new "Strategic Program."[22] Al-Shahristani, moreover, notes that while he was in prison in June 1980, Barzan, Saddam's brother and the head of intelligence, and Abd Al-Razzaq Al-Hashimi, director of the Nuclear Energy Agency, approached him and offered to set him free if he would work on a project to develop an Iraqi atom bomb.[23]

In addition, information had become available to the Soviet government that Iraq was already covertly working on a nuclear weapons program before the Osirak airstrike, and Soviet estimates at the time were that Iraq could use the plutonium from the French reactor to build a bomb by the early 1980s, with three bombs by 1983 and five by 1985.[24] What the strike on the Osirak reactor did do was perhaps to stiffen Saddam's resolve and to commit him to a greater effort.[25]

The United States as a Threat?

Saddam eventually would come to see nuclear weapons as being useful in parrying a perceived threat from the United States and in Iraq's dealings with its nonnuclear neighbors, as will be seen below. As Saddam told visiting Japanese journalists in October 1990, the Soviet Union's influence was no longer what it had been, and in the resulting unipolar system, "we are calling for the appearance of [other] centers of influence able to balance America's out-of-control influence around the world.[26]

The Iraqis were keen students of the impact of nuclear weapons in other parts of the world and, as one Iraqi observer noted with approval in 1991, China's

acquisition of nuclear weapons had given the latter a way to balance both the United States and the Soviet Union, concluding, "this may lead [China] to the horizon of a more welcoming age in which a sense of a reassuring level of security will be solidified within acceptable levels of weapons."[27] Iraq also looked to India's achievements in this area with undisguised envy. As the Iraqi Army's newspaper noted concerning India's expanding nuclear activity, "Most of the countries of the Third World and of the Nonaligned Movement viewed India's efforts for independence in its nuclear power far from any Western umbrella or tutelage with satisfaction and admiration. . . . In other words, the Indian atomic bomb was a practical indication of the potential of the Third World and of the assertion of its will."[28]

Ultimately, from Iraq's perspective, there was no substitute for having one's own nuclear deterrent. Of course, in any case, no other state was willing to provide a nuclear umbrella, including the Soviet Union, which had been reluctant to do so even for Middle Eastern countries that had closer ties to Moscow than was the case with Iraq. As the Ba'ath Party's theoretical journal, *Al-Thawra al-arabiya* (*The Arab Revolution*), stressed in an article devoted to deterrence: "Deterrence provided by other countries is of doubtful credibility, as there is no country which would sacrifice its own people and cities for the sake of another people in the terrible nuclear shadow."[29]

Nuclear Weapons as a Legitimizing Vehicle

From a political perspective, acquiring nuclear weapons could also be viewed as a potent vehicle for Saddam to mobilize public support to help legitimize his regime, burnish his personal image as leader at home, and enhance his regional standing. Specifically, attaining the status of a nuclear power would have been both a means of providing credible security for the nation and, at the same time, a major accomplishment in science and technology that Saddam could claim as his own. As such, it was in Saddam's interest that various domestic and regional constituencies at least be aware that nuclear weapons were being developed.

Reaching the Domestic Audience

Although Saddam's personal role in promoting Iraq's nuclear program was clearly paramount, he also sought to generate and take advantage of broad-based support from key sectors of the Iraqi political system and society. Protecting one's country successfully could be expected to elicit support in any political culture. By defining the threat, often reflecting perceptions based on widely held beliefs and on enduring geostrategic factors, Saddam could expect to find a ready audience in Iraq, as well as throughout the Arab world, where a deep-seated frustration with what was viewed as humiliating impotence in the face of Israeli aggression or an Iranian quest for regional hegemony existed.

The state-controlled Iraqi media incessantly drew attention to this general threat situation and emphasized the nuclear threat to the nation in order to mobilize support for the country's own nuclear weapons program as a response. However, such publicity could backfire by placing the regime in the awkward position of seeming to be weak if it did nothing to address the challenge it had helped elevate in the media. A failure to meet an implicit commitment to correct the power gap continually highlighted by the regime could have proved embarrassing.

Iraq's Military

First, support could be expected to be forthcoming from Iraq's military. The military was an especially important constituency for Saddam, not only as a major tool of his foreign and domestic policy, but also as the most likely source of coup attempts. Appeals to their nationalism and professional pride could have been an effective way to shore up their loyalty, as they would have benefited from the additional funding, prestige, and responsibilities emanating from a nuclear arsenal. The military apparently keenly felt the need to redress the regional power balance. As Staff Major General Wafiq Al-Samarra'i remarked about confronting Iran's nuclear plans, even after his defection from Saddam's Iraq, "If we, the Gulf Arabs, did not have a strategic deterrence force, that would have been a form of suicide," and he rued the fact that all the blame for pursuing a nuclear capability had fallen on Saddam, who was only trying to "fill this gap in the strategic balance."[30]

The regime no doubt would have taken advantage of the acquisition of nuclear weapons for maximum political gain with the military in a manner similar to its previous exploitation of the achievements in the field of missile technology. To take just one analogous example, an internal recruitment poster seeking technical personnel to serve in the new Missile Branch appealed to the military's patriotism and highlighted Saddam's accomplishment by promising recruits that they could now play a part in "attaining victory over imperialism and Zionism and raise Iraq's banner high under the leadership of our awesome pillar, Saddam Husayn."[31]

The Ba'ath Party

The ruling Ba'ath Party, including its structure within the military, reinforced the sense of entitlement to Iraq's possession and use of WMD. Not only was Saddam's claim to the effect of "I consider that the Arabs have the right to possess any weapon that their enemy possesses" made one of the teaching points in a Ba'ath Party manual intended as a guide for Ba'ath political officers in the military, but so was the manual's conclusion. It declared that Iraq had a right to use any such weapons—at least the chemical weapons then on hand—to counter the nuclear weapons of "a party [that is, Israel] which continuously picks quarrels with and threatens the Arab Nation and Iraq."[32] The Party's legitimacy clearly would have been enhanced if Iraq succeeded in acquiring nuclear weapons.

Iraq's Scientists

Iraq's large scientific community was also a natural bureaucratic ally because of the material benefits and professional prestige that would accrue to its members, although they might express this in patriotic terms. [33]

Iraq's Public and Students

Although gauging public opinion in a regime as closed as that of Saddam's would have been difficult, most Iraqis would probably have been pleased for their country to achieve a nuclear power status. According to one Iraqi nuclear scientist, the

nuclear program was "very popular with most Iraqis," who viewed its existence most frequently in terms of being a counterweight to Israel.[34]

One potentially disruptive subset of the public—the student population—was specifically targeted by using news of achievements in the nuclear field. Lectures by officials to members in the obligatory Iraqi Students' Union would frequently hint that a nuclear bomb was being developed, and most students seemed proud that Iraq would soon become a "great power" (*quwwa udhma*) and that "America will fear us."[35]

Nuclear Weapons and the Defense of the Arab Nation

In many ways, Saddam also envisaged the wider Arab public as part of his natural constituency. Arrogating to himself the right to speak on behalf of all Arabs, he consistently portrayed threats to, and successes by, Iraq as applying to the Arab world as a whole. On a personal psychological level, Saddam saw himself as the heir to Gamal Abdel Nasser's pan-Arab leadership role—and for Saddam that also meant having nuclear weapons, which he felt were a key capability of major leaders.[36] Arab unity had always been one of the keystone principles of the regime's Ba'athist ideology, and such an appeal could thereby also garner greater legitimacy for Saddam within Party circles.

In a keynote address he delivered to the senior commanders of the Iraqi Armed Forces on 26 April 1990, Saddam himself had stressed that "the enemies of Iraq are also the enemies of the [Arab] Nation" and maintained that "the essential basis for defense is not local [*qutri*] but national [*qawmi*]," that is, Arab-wide rather than just Iraqi.[37] Indeed, for him, any sacrifice that Iraq made was just "the price for the ascent of the entire [Arab] Nation and not just of Iraq."[38] And, as Saddam concluded, "Iraq is destined to be the core of the Nation [*umma*] at a historic moment, which is a great honor."[39] Characteristically, the Iraqi Ba'ath Party's theoretical journal could appeal both to the pride of its Iraqi members and of the wider Arab public on this level when it stated that a key step in ensuring the

security of the Arab nation was "to depend on the national proclamation by the Comrade Leader [that is, Saddam] . . . as a comprehensive guide and as the logic for an Arab security strategy and for combined national action."[40]

In that light, Saddam could claim to be providing protection to the entire Arab world from the common threat, with Iraq as a counterweight to Israel and Iran. For example, the Iraqi armed forces' open-media journal reminded Arab readers, "Iraq was able to destroy the center of the main threat, a great threat, to Arab national security, namely the Iranian threat."[41] Moreover, being able to showcase such an achievement as an atom bomb would have tapped into an enduring sense of unfairness at both a government and popular level throughout the Arab world stemming from a perceived double standard of the West's turning a blind eye to Israel's nuclear arsenal while prohibiting the Arabs from pursuing a similar capability. Saddam could interpret the reported offer by Saudi Arabia's King Khalid to finance the rebuilding of Iraq's reactor after the Israeli raid in 1981 (although the French ultimately refused a new contract) as a tangible sign of such potential solidarity.[42] Later, according to press accounts, Saudi Arabia did help finance the Iraqi nuclear weapons program to the amount of $5 billion.[43]

At times, Saddam seemed to offer—albeit in vague terms—a security umbrella to the other Arabs, at least with the binary chemical weapons already in Iraq's arsenal, which suggests that this guarantee might later also have been extended to Iraq's future nuclear weapons.[44] The Ba'ath Party's official journal already assumed that Saddam was succeeding in ensuring security and success for all the Arabs, emphasizing that he had "an encompassing vision" on Arab security, "which will guarantee Arab unity of effort and the mobilization of forces in order to return the Arabs to their golden age and to their leading role in building human civilization."[45]

Given his ingrained penchant for rigid personal aggrandizement and centralized control over military and political decision making, it is highly unlikely that Saddam would have shared any of Iraq's nuclear technology—which could be traced easily—with terrorist groups or with other regional states. Such sharing

could have led to a loss of his personal control and to potentially unwanted confrontations with other states.

Nuclear Weapons and Modernity

In a less tangible way, acquiring nuclear weapons would also have represented for Saddam a confirmation of his regime's success in achieving modernity and power. Success in the nuclear field would have been seen as recognition of Iraq's membership in a privileged circle of countries and as the very symbol of national development.

Not surprisingly, the official Iraqi position was that the acquisition of the atom bomb was at the top of the list of Israel's technical achievements in the military field.[46] The Iraqi media viewed nuclear power as uniquely important, portraying the Israeli raid on the Osirak reactor as "a clear-cut preemptive strike against a technological project which, if it had been fulfilled and had developed, would have eliminated the Zionist plan" to achieve its technological-industrial hegemony in the region in the 21st century.[47] In that light, Saddam could claim with conviction that Iraq's enemies were already disconcerted that Iraq had developed the technological, scientific, and military power to implement its political will.[48] Indeed, linking science to political power, the Ba'ath Party's theoretical journal claimed that the main reason why Israel had attacked Iraq's nuclear reactor in 1981 was that Israel was anxious to prevent the Arabs from "acquiring any scientific or technical knowledge," since "the Zionists believe that this is the only means by which they can impose their will on the Arab nation."[49]

As one might expect, the Baghdad regime could, and did, use technical successes for propaganda routinely to its advantage, providing material for sycophantic praise in the local media, as in one Iraqi newspaper, which heralded such achievements with typical hyperbole: "The successes which the mujahidin in military industrialization achieve and which have raised Iraq to a high level of development and scientific and industrial technology have become the object of wonder for the [Arab] Nation's sons and their security refuge, enabling them to enter genuinely

into this advanced era and to create a balance of power vis-à-vis covetous aggressors."[50] The military press, for its part, was also bursting with pride as a result of the country's new weapons developments, claiming, "Iraq has broken the barrier of underdevelopment and achieved what was considered in the category of miracles."[51]

Saddam's achievements in this field could also compensate for any feelings of national inferiority toward the West stemming from Iraq's past underdevelopment. In a 1990 speech in which he focused on the achievements of Iraq's military industry, for example, Saddam claimed that outside enemies "treat us as if we were Third World countries." Admitting an element of truth to that perception, he noted that indeed "there are still many people who go barefoot, not because they do not have shoes but because they are backward, and there are still many of our people who do not have bathrooms."[52] However, he stressed, "our people have the will to progress and the determination to achieve progress even if we are Third World countries."[53] By the late 1980s, nuclear power began to be included in standard Iraqi propaganda iconography. One particular poster shows representations of the Babylonian past juxtaposed with Saddam in uniform, with a prominent atomic symbol as the link, vividly portraying nuclear power as the crowning achievement equal to those of the country's ancient civilization.

Saddam could also appeal to the broader Arab public on the issue of modernity. For the state-controlled Iraqi media, in fact, Iraq's achievements in technology were the litmus test for its assumption of the leading role in the Arab world. As one newspaper editor put it, "Iraq, since the 1970s, has stood out as the country of choice to become the natural center [of the Arab world] . . . the one most capable of achieving industrial and technological progress."[54]

To Hide or Reveal?

Saddam had to balance touting advances in the nuclear field with the need for plausible denial; he could hint at the future only in oblique terms while, at least officially, seeking to deny to the very end that Iraq was pursuing nuclear weapons.

According to one former Iraqi nuclear scientist, Saddam had developed considerable skill in using indirect language to communicate Iraq's impending nuclear capability to Iraqi military officers and to the rulers of the neighboring Gulf states.[55] For example, in a speech on 1 April 1990 to the General Command of the Armed Forces, he claimed, "Condensers (*mukaththifat*) costing [only] 10,500 dinars are all that is needed to build a nuclear bomb."[56] Yet at the Geneva meeting with U.S. Secretary of State James Baker in the immediate run-up to the start of Operation Desert Storm, Tariq Aziz, Iraq's foreign minister, felt compelled to claim, "As for fears, doubts, and allegations about Iraq's nuclear capabilities, we are a country which is signatory to the nonproliferation treaty. Our very humble installations are subject to constant inspection."[57] For his part, Egypt's President Husni Mubarak, who felt deceived by Saddam's dissimulation to him before his invasion of Kuwait, would later remember with irony how Saddam made empty boasts to him: "He would tell you, 'I have nuclear weapons,' even though he didn't have nuclear weapons; he had zilch."[58]

Although the nuclear program was highly classified, at least those in the upper echelons of the Iraqi government, the military, and the scientific community would have been aware of it directly. And the public would at least have suspected that such a project existed, given the frequent related discussions in the media and public knowledge of the Osirak reactor that had been struck. Indeed, the sheer size of the nuclear program would have made its complete secrecy difficult notwithstanding Iraq's closed system, since the program had some 20,000 employees.[59]

Even an Iraqi military magazine from May 1990 could not resist showing a photo of Saddam posing with krytrons—suspected triggers for nuclear weapons—whose controversial covert purchase abroad by Iraq had recently caused belated international concern about the country's nuclear program. The photo accompanied a summary of a recent speech by Saddam in which he had refused to accede to foreign pressure to abandon his nuclear program, declaring defiantly, "Should we back down on the new hallmark of patriotism, which is technological

and scientific development? . . . Anyone who would abandon the line of industry related to technological and scientific development in his country would also abandon his patriotism."[60] Although no explicit linkage was made between the photo and the article, the implication of their juxtaposition was clear: Saddam would continue to pursue the nuclear program despite any international opposition. As a result of such hints and leaks, even a senior military officer could conclude that by 1990 "many civilians and military believed that we had a nuclear weapon or something similar."[61]

Were There Any Skeptics?

Any overt Iraqi opposition to Saddam's pursuit of nuclear weapons or to their possible use in war seems to have been absent. Naturally, critics would have found it imprudent to voice doubts openly even if they had harbored them, and anyone who declined to work on the nuclear weapons program might be punished, as was the case with the nuclear scientist Husayn Al-Shahristani, who spent more than a decade in prison after he had commented to Saddam in 1979 that the latter's decision to pursue nuclear weapons would lead to problems for the Iraqis.[62]

Nevertheless, even within the military one could find isolated skeptics expressing reservations, however veiled their thinking might be. For example, in the files of the 3rd Armored Division, there is a handwritten text—either the text for a briefing or the transcript recorded from a briefing by an Iraqi general—entitled "The Dangers of Nuclear Radiation."[63] The thrust is a broad-based critique of nuclear war, with the author using as vehicles the Israeli-South African cooperation in testing a nuclear weapon in 1979 and the nuclear accident at Chernobyl in 1986.

The author notes, "The problem with this [Israeli-South African] cooperation is not that it represents a threat [only] to the security of the countries of the Third World, in which these two states are located geographically, but rather that it threatens the security of the entire world."[64] Indeed, rather than emphasizing the conventional argument of the unfairness of the exclusivity promoted by the Great Powers, the author holds that "The horizontal proliferation of nuclear weapons to

small states which have not been considered nuclear states, such as Israel, Pakistan, Argentina, and South Africa, will increase the nuclear danger to which the world is exposed, since the entry of any new country into the nuclear club will certainly increase tensions and may in itself be the cause of conflict."[65]

In addition, he expresses his concern about the possibility that such small nuclear-armed states could drag their patrons into a nuclear confrontation on their behalf: "Likewise, the ideological links between such small states and the Great Powers may force the latter to intervene to help the former, thus initiating a total nuclear war between the Great Powers."[66]

In particular, the author addresses the danger of radiation that would result from a nuclear war, highlighting the case of the defective reactor at Chernobyl in support of his argument. He concludes, "There is only one sure means to protect against the dangers of radiation, namely to avoid being exposed to it. This makes the imperative of avoiding an outbreak of a nuclear war an urgent and absolute requirement for all of humanity."[67] Despite the author's politically correct explicit focus on Israel and South Africa, his implicit critique of the use, or even possession, of nuclear weapons by any state—including aspiring minor powers—appears to be exceptionally bold given the prevailing atmosphere and direction at the time in Iraq.

Iraqi Perspectives On Nuclear Deterrence

Contrasting Western Academic Frameworks

Traditionally, one of the principal—if not the principal—perceived benefits of nuclear weapons has been their utility as a strategic deterrent, leading to stability, as was said to have been the case throughout the Cold War. That is, the Soviet and American nuclear arsenals were seen as having created the basis for mutual deterrence and, as a corollary, this had led to the avoidance of major conventional war between the two countries and caution in regional crises, out of fear that a confrontation could escalate to an uncontrollable and unwanted full-scale nuclear exchange. The guiding assumption of this view has often been that the acquisition

of nuclear weapons by multiple countries, including those in the Middle East, would lead to a benign replication of the earlier experience between the United States and the Soviet Union. Thus, nuclear proliferation was to be viewed in positive terms, leading to increased stability among countries with symmetric nuclear arsenals, since these states would seek to avoid war out of fear of the potential triggering of an unthinkable nuclear holocaust.[68]

Such neorealist, or optimist, views were injected into national debates as U.S. policy on Iraq was being considered. For example, former National Security Adviser Zbigniew Brzezinski, in arguing against a military option after Iraq's invasion of Kuwait, had already raised the analogy between the ability to deter a nuclear Iraq and the United States' successful experience with the Soviet Union.[69] This underlying premise was noticeably persistent, resurfacing in debates in the United States preceding the 2003 Operation Iraqi Freedom, with opponents of the war using the argument that Iraq could be expected to behave as responsibly as the Soviet Union had with any WMD.[70]

A countering pessimist view suggests that the role of nuclear weapons was a less significant factor in the preservation of peace during the Cold War, and stresses instead the complexity and ambiguity of the historical record and the instability of the deterrence experience even during that era.[71] Or, even when accepting the more traditional view of the earlier period, skeptics have been less sanguine about the possibility of replicating such a phenomenon elsewhere in the post-Cold War era, pointing to the significance of the specific context of the Cold War.[72] Some have highlighted the differences specifically for the Middle East, calling into question the validity of the deterrence analogy for that region.[73]

What Is Nuclear Deterrence: The Iraqi View

Saddam, and Iraqi spokesmen in general, addressed frequently the need to deter actual and potential enemies and saw the establishment of a nuclear-induced peace as a possibility. The assumption of the positive outcome of deterrence has been surprisingly resilient in Iraqi thinking, and even recently one Iraqi nuclear scientist

promoted the idea of a nuclear balance as a means of maintaining peace in the Middle East, based on his interpretation of the Cold War experience and of the India-Pakistan situation.[74]

Other Iraqis, however, placed a greater focus on the possibility of actually employing nuclear weapons in combat. The disagreement was more apparent than real, as even those emphasizing deterrence still not only envisioned the likelihood of continued conflict at lower levels but also seemed to accept a continuum of conflict potentially leading to nuclear war. In a way, Iraqis at times seemed to still be grappling with this concept's boundaries, not in a real debate, but simply in putting forth their views when addressing specific geopolitical situations, and probably had not yet articulated a cohesive or officially sanctioned approach to this issue.

Saddam himself seemed to share in these contradictions. At times, he had hinted at the possibility of mutual deterrence leading to peace if Iraq acquired nuclear weapons. In an interview with an American reporter in 1991, he argued, "You [that is, the United States] were the first to acquire them [nuclear weapons] and know how complicated they are. How would it be if this or that state were able to take a similar step and develop nuclear bombs? If we had the atom bomb, that might facilitate peace and the elimination of WMD and, as a result, allow people to live securely." And, he even made the fanciful suggestion that the United States "lend us some [nuclear] bombs, which might facilitate peace in the Middle East."[75]

Pointing to the U.S.-Soviet example of mutual deterrence, Saddam went so far as to suggest that the international community should say to the Arabs, "Take a [nuclear] weapon so that you can use it to confront the Zionist threat from atom bombs and thus prevent the Zionist entity from using atom bombs against the Arabs." According to Saddam, "that way, the world will avoid the dangers which result from using atom bombs in wars." Admittedly, Saddam was sensitive to the fact that this argument might sound merely like a rationale for Iraq's acquisition of its own nuclear weapons, and protested somewhat lamely, saying, "This is

just logic, not an excuse for the Arabs to acquire nuclear technology for military purposes."[76]

Would Deterrence of Saddam Have Worked?

Even under ideal circumstances, the conduct of mutual deterrence is far from easy, and the related instances of brinkmanship and the ability to control escalation—whether done frequently or not—require a high level of accompanying political skill and strategic vision to make effective use of nuclear deterrence to achieve one's objectives without going to war.

Saddam's Brinksmanship

There are legitimate doubts about whether Saddam possessed the necessary skills to successfully engage in brinksmanship, based on his miscalculations in decision making and judging from his crude attempts at deterrence in those instances when he did seek to use the existing capabilities he had—chemical and biological weapons—for that purpose. His decision to initiate a full-scale war against Iran in 1980, his invasion of (and even more so his refusal to leave) Kuwait in 1990–91, and his decision to stay and fight a U.S. administration intent on replacing his regime in 2003 all revealed major flaws in his assessment and decision-making processes.

At the same time, from his perspective, inflammatory language and threats of escalation were at the heart of successful deterrence. He expressed such destabilizing views in a speech to the senior officers of the Iraqi Armed Forces on 26 April 1990: "The Arab nation has become accustomed to diplomatic language or, to be more precise, to wishy-washy language. What is needed instead is language that will bash in the enemy's head and make it bleed, so that the Arabs see this for themselves and believe that there is no one who can throw even a stone at Iraq."[77]

To be sure, Saddam successfully deterred Israel in 1990 thanks to a new capability of binary chemical weapons to be delivered by the extended-range Scud surface-to-missiles (the Al-Husayn), as he threatened to "burn half of Israel" to deter the

latter from attacking Iraq's developing nuclear infrastructure.[78] However, this may have been only an unstable and illusory short-term respite, given the two countries' seemingly irreconcilable policies. According to two analysts who assessed the situation at the time, given Israel's adamant stated insistence that no other regional state could be allowed to acquire nuclear weapons and Iraq's resolve to continue its program to do so, "by mid-1990 the Israeli-Iraqi showdown over the nuclear issue appeared to be just a matter of time."[79] Moreover, with threats such as these, Saddam would place himself in a corner and reduce his scope for maneuver, with his credibility at stake, not so much with regional and international audiences as with his domestic one. For example, he had apparently pronounced this threat against Israel not only for foreign consumption, but had also expressed the same position to key domestic sectors, such as to the General Command of the Armed Forces.[80] Failing to follow through with such threats could mean a risky loss of face within important sectors of his security apparatus. As it was, this event also raised his profile as a dangerous and irresponsible threat to regional and international stability.

Perhaps a key question is whether the course of events would have been different if Saddam had waited until Iraq had acquired nuclear weapons—even if he demonstrated only a single nuclear device publicly—before invading Kuwait and had then engaged in deterrence. Many Iraqis certainly believe so in retrospect. Mahdi Obeidi, one of Saddam's top nuclear scientists, for example, calls into question Saddam's acuity based on this episode, noting that if the latter had really wanted to have nuclear weapons as a deterrent to a U.S. invasion, it would have made far more sense to wait before invading Kuwait until he had such a capability in hand.[81] Obeidi, in fact, based on this key misjudgment, explicitly taxed Saddam as "not a rational strategist."[82] Staff Major General Wafiq Al-Samarra'i, then deputy director of Military Intelligence, likewise stressed that the outcome over Kuwait might have been different had Saddam waited a year until Iraq had exploded its first nuclear device—as Al-Samarra'i was convinced it would have done—and concluded, "This was one of the Iraqi regime's—and of Saddam Husayn's—mistakes, the mistake of a lifetime."[83]

Deterring the United States

The perception that nuclear weapons could deter the United States was also the view at the highest policy levels in Iraq. It seems that Saddam had long before internalized an assumption that Iraq could deter the United States even with a small nuclear arsenal. According to Jafar Diya' Jafar, Saddam had told him during a meeting in 1981 that, if Iraq possessed nuclear weapons, this would serve "as a deterrent against attacks by Israel and by those who protect the state of Israel and who give it continuous backing and support [that is, the United States.]"[84] Given this paradigm, Husayn Kamil's (Iraq's former minister of military industry) report of exaggerated progress in the nuclear program—by telling Saddam a few days after the invasion of Kuwait that the enrichment of uranium for nuclear weapons would occur soon—may have influenced Saddam's decision making during the subsequent confrontation with the international community, making him more willing to take risks.[85]

According to a senior Iraqi military officer from the Saddam era, after the Gulf War, Saddam's son Udayy told him and other senior officers that not having waited until Iraq had nuclear weapons before invading Kuwait had been a major mistake, implying that he believed the outcome in such a case would have been different, and perhaps suggesting that Iraq—were it ever to have acquired nuclear weapons—would have been even more prone to similar risky adventures, believing the outcome would be different thanks to this new capability.[86]

In the case of the Gulf War, one can posit that, at the very least, the United States would have done considerably more soul-searching and had had more intense debate on the appropriate course of action, with perhaps constraints on its freedom of action in responding to the invasion of Kuwait. Perhaps more significantly, nonnuclear countries in the region, including the pivotal state of Saudi Arabia, whose cooperation was vital for an effective U.S. response, could well have proven to be the critical vulnerability in the United States' strategy. Had Saudi Arabia been reluctant to provide access and support for a large-scale U.S. deployment that might have risked angering a nuclear-armed Saddam—and Saudi permission was

far from automatic initially in any case—U.S. planning and operations would have been complicated exponentially.

Saddam's Attempts at Deterrence

When Saddam tried to play his deterrence card during the 1991 Gulf War, he did so poorly. It appears from a captured audio tape, reproduced in part in the *Duelfer Report*, that during a closed-door meeting with his inner circle in January 1991, Saddam had ordered or had intended to order the potential use of biological and chemical weapons against Saudi and Israeli cities, as well as against U.S. troop concentrations.[87] Reportedly, launch authority had even been delegated to field commanders, but only in case of a U.S. nuclear strike on Baghdad and the incapacitation of the central leadership.[88]

Yet, surprisingly, Saddam does not seem to have exploited this possibility for deterrence. He did spell out in an unrelated interview in June 1990 one of the "red lines" that would have triggered a chemical response against Israel, namely if the latter first used chemical, biological, or nuclear weapons against Iraq, whereupon Iraqi missile and air bases had orders to launch retaliatory strikes with chemical weapons.[89] However, the broader potential threat was not communicated clearly during the Gulf crisis to Iraq's adversaries—which is a necessary condition for deterrence to work—as Saddam made no effort verbally, through third parties, or by detectable activity on the ground to suggest such a possibility. Attempts by Iraq to try its hand at deterrence seemed vague and isolated and were focused on low-level press articles. For example, one possible attempt during the Gulf War at hinting at the use of WMD by Iraq may have come in a statement by Iraqi Minister of Defense General Sadi Abbas Tuma to the Iraqi News Agency, in early February 1991, which was then carried in the Jordanian press buried in the back pages. According to General Tuma, the Iraqi armed forces had many weapons, and "some of these effective weapons have not been used yet," but the language was opaque and the message was far from clear.[90]

A More Aggressive Iraqi Perspective: "Offensive Deterrence"

Although nuclear deterrence is usually viewed as being a defensive strategy, Iraqis also focused on a more aggressive form of deterrence, whereby a nuclear capability would provide a shield for a country to act aggressively and impose its will on others, whether on a nuclear peer or a nonnuclear power. Even those Iraqis who accepted the effectiveness of nuclear deterrence focused on using that concept as a vehicle to achieve potentially destabilizing political objectives. This could be accomplished either by wielding nuclear-based political clout without combat (useful primarily when directed against nonnuclear actors) or as a supporting effort to conventional or unconventional combat.

Offensive Deterrence and Changing the Status Quo

Rather than a tool for reinforcing stability and the regional status quo, many Iraqis viewed nuclear weapons as an asset allowing for a more assertive policy challenging that status quo. Significantly, Saddam's brother Barzan, at the time in charge of Iraq's Ministry of the Interior, no doubt reflecting sentiments expressed by Saddam and prevalent within the ruling elite, felt that the power which flowed from Iraq's possession of nuclear weapons would be sufficient to alter the political balance in the region. As early as 1980, he had confided to Husayn Al-Shahristani, the Iraqi nuclear scientist who was then in prison and who he was trying to woo back into the weapons program, that "Iraq is resolved in no uncertain terms to develop its military nuclear capabilities because that will give it the power to redraw the map of the region."[91] In fact, in the opinion of Jafar Diya' Jafar, Saddam wanted nuclear weapons to turn Iraq into a regional power and to facilitate spreading his version of Ba'athism to the other Arab countries.[92]

Wielding Political Clout through Offensive Deterrence

Iraqis had long interpreted others' use of nuclear weapons as a way to impose their will to the detriment of Iraq's or the Arab world's interests. Linking deterrence to the appearance of nuclear weapons after World War II, one study in the Ba'ath Party's official theoretical organ noted that other states used this strategy as a

means to "achieve their political objectives that are hostile to or that run counter to Arab interests or to thwart any strategic move designed to fulfill the liberation of the Arab nation and the establishment of the latter's unified power enabling it to defend its national security."[93] Acknowledging "traditional" defensive deterrence, the same author contrasted the latter version of deterrence to its converse, labeled "offensive deterrence" (*rad hujumi*), which facilitated the wielding of political clout to "prevent an adversary from opposing an action that the [deterring] state wanted to undertake."[94]

In some ways, in fact, Iraqi perceptions of Israel's nuclear strategy seemed to have shaped Iraq's own embryonic thinking on deterrence. The underlying premise in Baghdad was that Israel, thanks to its nuclear monopoly, could seek to impose a "peace by deterrence" (*salam al-rad*) or a "nuclear peace" (*al-salam al-nawawi*) in the region to its own advantage.[95] As some Iraqis saw it, Israel had already used "this weapon more than once, in effect, not necessarily in a direct manner; however, the mere insinuation that it possesses it or its readiness to use it tips calculations by virtue of the psychological effects it has, which are reflected in political and military [terms] in the arena of confrontation."[96]

Saddam believed that such brandishing of nuclear-based political clout worked best when only one side had nuclear weapons. In fact, from his early days in power, Saddam had already linked the acquisition of nuclear weapons with the prevention of Iraq's subordination to Israel. As he declared at a meeting of Iraq's Council of Ministers on 23 June 1981 (probably also hinting at a desire to elicit the Soviet Union's nuclear help), "I believe that anyone and any state in the world who wants genuine peace and security and who really respects other peoples . . . and who does not want these peoples to be subservient or oppressed by outside foreign forces must help the Arabs by one means or another to acquire the atom bomb in order to counteract the Israeli atom bombs which already exist."[97] Saddam himself was sensitive to Israel's use of this "offensive deterrence" as a tool to compel others to accept unfavorable terms, although he called it by the less academic term "blackmail" (*ibtizaz*).[98] He claimed that this, in fact, was what Israel had been

doing to the Arabs all along. Referring to Israel's nuclear arsenal, he asked rhetorically, "What would happen if 'Israel' said to the Arabs, 'What if it were to impose conditions on the Arabs which, if the latter did not carry out, [Israel] would then use atom bombs against them?' What would be the result for the Arabs, and for humanity, in the face of this blackmail, and given this dangerous situation?"[99]

A document released recently by the Iraqi government may provide an insight into Saddam's potential use of nuclear weapons to browbeat someone into acquiescing to his demands, even if by only using the capability as a bluff. When he was faced with retaking cities in the rebellious South in 1991, following Iraq's defeat in the Gulf War, Saddam's instruction to his top leadership were that leaflets be airdropped by helicopter over a city, giving the inhabitants three hours to evacuate to avoid an impending chemical weapons attack. This was only a ruse intended to induce the rebels to leave cities so that they could be defeated more easily out in the open.[100] However, given the history of his past use of chemical weapons, it was a credible threat. Had he used similar methods (which he thought would succeed) once he had acquired nuclear weapons there would have been no guarantee that he was bluffing, and he might well have been tempted to try to impose his will through such blackmail in future scenarios, especially against a non-nuclear opponent.

Iraq also feared that Iran would be able to duplicate this strategy against Iraq once it, too, acquired nuclear weapons, a fear no doubt heightened by the blocking of Iraq's own nuclear program in the wake of the Gulf War. For one influential Iraqi media commentator close to government circles, Sad Al-Bazzaz, the importance of Tehran's pursuit of nuclear weapons beginning with the Shah lay in the fact that this would have allowed Iran to become "an influential regional power." And, a nuclear capability would have allowed Iran to "impose deterrence on the regional level" (*fard al-rad fi al-nitaq al-iqlimi*).[101] As a corollary, "the most important factor which had propelled the Shah to develop a nuclear program in Iran was his desire to play a hegemonic role in the Gulf region." Specifically, Iran would be able to use nuclear weapons as blackmail, in a coercive manner intended to "tear down the

will to resist any Iranian plans [which are] part of its strategy of extending its regional influence and a subjugation of opposing wills."[102]

As the same commentator explained further, "This is the art of not using force despite its availability and of preventing other players from using force, and this is the condition whose existence and effect are in effect before the initiation of combat. That is, the Shah was in constant need of brandishing his stick in order to carry out his role of regional policeman and, therefore, possessing nuclear weapons would have responded to that requirement. And, by that means, the Shah would have been able to transform his regional deterrent from a conventional one to a nuclear one."[103] As he further assessed, "the impact of any Iranian nuclear weapons, even if limited [in number], will be reflected primarily on Iran's neighbors—Iraq first of all, and the Arab Gulf states secondly— in terms of imposing [Iran's] hegemony, and in a revision in the pattern of relations on the basis of intimidation, thus enabling Iran to achieve its regional goals."[104]

Changing the Balance of Power

The Ba'ath Party's official daily newspaper, *Al-Thawra*, for its part, judged that nuclear weapons were key in determining the balance of power in the Middle East and maintained that the "American-Western attack to destroy Iraq's nuclear capability, which it used for peaceful purposes, and the American insistence on preventing the Arabs from acquiring a nuclear capability" had been meant specifically to ensure that Israel retained its nuclear monopoly.[105] Conversely, breaking the Israeli nuclear monopoly had long been a stated Iraqi priority. An intelligence assessment of Israel by Iraqi Air Force Intelligence in 1979, for example, in evaluating the "vulnerabilities of Israeli military power," had identified one of these as "the acquisition of nuclear weapons by the Arabs."[106] Similarly, a purported Israeli Ministry of Defense policy document outlining unacceptable situations for its security was translated and distributed to field commanders in the Iraqi military. One area that was particularly highlighted in that document was the apparent fear by Israel of the acquisition of nuclear weapons by any Arab

state, as the document purportedly stated that "Israel will not permit the Arab countries to develop nuclear weapons, as the existence of nuclear weapons in the hands of any Arab country will be tantamount to a direct threat to the existence of Israel."[107]

The Potential Impact of Aggressive Deterrence

Although the intent of wielding nuclear clout in this aggressive manner was attributed to others, Iraq clearly would have been able to pursue the same policy it condemned—but claimed was successful—if it had acquired a nuclear capability of its own. Even in the absence of overt or apparent conflict, the weight of an Iraqi nuclear capability—combined with an activist policy backed by the use of other forms of force—could have exerted a markedly negative influence in the region, with potentially significant negative results for the interests of the United States. That is, the dynamic that might be created by a regional power, even if it is simply known to possess a nuclear capability, might, at a minimum, be what some sociologists call "the third dimension of power" or "the other side of power"—other actors, recognizing the existing power imbalance, abstain from conflicts with the stronger actor, which they calculate they would be bound to lose or which would inflict intolerable costs, and instead accommodate the stronger actor and accept even an unfavorable status quo which the latter imposes.[108] One could equate the situation to living in the shadow of a snow-covered mountain, where one might unconsciously start to tiptoe even inside one's own house out of concern for triggering an avalanche. The negative implications for U. S. military access and security assistance, economic relations, and internal stability of friends and allies under such circumstances could be significant and long lasting.

A still more assertive aspect of this deterrence strategy involves actually engaging in conventional and unconventional conflict at the subnuclear level, with nuclear retaliation threats used as a shield to prevent escalation or retaliation. Iraqis generally recognized that even with nuclear weapons, conflicts could still occur at lower levels. Some observers posited that nuclear deterrence would be effective

only in certain scenarios and certainly would not be a sufficient factor to make armed conflict at lower levels obsolete.

For example, the Iraqi Defense Ministry's journal held that nuclear weapons by themselves were not always capable of deterring conventional war; although the Arabs had known that Israel already possessed nuclear weapons, this had not prevented them from launching the 1973 War.[109] However, according to a high-profile study written well after the Gulf War, which appeared on a website run by Saddam's son, Udayy, Israel was able to launch conventional strikes with impunity against Syrian forces in Lebanon thanks to its existing nuclear deterrent, which limited Arab retaliation. The study also warned that by relying on its unilateral nuclear deterrent, Israel would ultimately seek to "impose a political solution on Syria and the Palestinian Authority." At the same time, according to this study, it was only Israel's nuclear monopoly which prevented "neighboring Arab countries and those further afield from intervening in Palestine if the situation collapses as a result of the proclamation of a Palestinian state."[110]

In other words, by being secure from nuclear retaliation, Saddam would now have greater latitude in using other forms of force, be they conventional war, terrorism, or even chemical or biological war, without fear of Israeli nuclear retaliation.

Thus, rather than creating a stasis, Saddam's intent would likely have been to use mutual deterrence to enable Iraq and the other Arab countries to have greater space to maneuver in order to pursue a more aggressive policy toward Israel, secure—even if mistakenly so—in the knowledge that Israel could not retaliate without risking an escalation to an Arab nuclear strike. In sum, acquiring nuclear weapons meant not simply the ability to prevent another country from using the equivalent or similar weapons but also the ability to use the newly found clout to assert one's own independence and political will—even violently—to change an unfavorable status quo at the expense of both nuclear and nonnuclear powers. If those trends were indicative of the future direction of Saddam's foreign policy, one can posit that if and when Iraq was able to add nuclear weapons to its arsenal, he might have become even more aggressive.

Nuclear Weapons as a Warfighting Tool

Ultimately, Saddam approached the use of nuclear weapons not only as a political tool, but also as a warfighting tool. He considered nuclear war feasible and nuclear weapons to be an integral element of a country's arsenal to be used on the battlefield. It was largely Iraq's military that approached this issue in a systematic manner, but Saddam also seemed to consider in general terms the potential use of nuclear weapons in war.

The Linkage between Deterrence and Warfighting

At its root, Iraq's vision of nuclear deterrence was intimately linked to that of warfighting. That is, deterrence could only be as effective as a country's perceived readiness to actually launch its nuclear weapons. Writing about nuclear deterrence, one Iraqi observer noted that for small and medium-sized states, creating fear about the actual willingness to use nuclear weapons was key to a credible deterrence policy: "Small and medium-sized states . . . will not succeed in building an effective foreign policy able to deter foreign threats unless this policy relies on national power able to create fear in the minds of decision makers in hostile countries."[111]

Central to Iraq's assumption of this linkage was its perception that Israel would, as a matter of course, use nuclear weapons on the battlefield; that is, that nuclear weapons were not simply a political deterrent or a doomsday weapon. Significantly, the above-cited study in *Babil* stressed that Israel had always refused to accept limitations on its use of nuclear weapons in tactical scenarios.[112] The same study also claimed that most of Israel's nuclear warheads were tactical and that Tel Aviv would have a very low threshold for their use. This warfighting scenario—including preemptive war—was seen as inextricably linked to Israel's effective use of deterrence: "Zionist nuclear deterrence relies on the following basis: the readiness of the Zionist entity to choose the nuclear option at the beginning of the period of armed tensions preceding the outbreak of war."[113] The use of tactical nuclear weapons, in particular—or "small-caliber nuclear weapons" (*al-asliha al-nawawiya dhat al-aira al-saghira*) as the study terms them—would be key to Israel's ability to implement its deterrence.[114]

Iraq's Concept of Nuclear War

Iraqi Doctrine

The Iraqi Army envisioned the use of nuclear weapons as an ordinary, if indisputably more lethal, component on the battlefield. To date, no Iraqi document containing a sustained discussion of the use of nuclear weapons at a strategic level has surfaced. However, Iraq did develop a concrete doctrine for the use of nuclear weapons in a warfighting mode at the tactical and operational levels. Specifically, an Iraqi Army doctrinal manual was devoted to this issue, and the same concepts were also included throughout the military system in an integrated series of doctrinal publications.

The manual in question here was published in July 1988, and a copy was captured by U.S. forces during the Gulf War. *Manual: The Operational Use of Weapons of Mass Destruction* appeared under the aegis of the Iraqi Army's General Staff, Directorate of Training, Chemical Branch, and carries an Iraqi security classification of "Restricted to the Armed Forces."[115] It was signed off by Special Forces Staff Lieutenant General Nizar Abd Al-Karim Faysal Al-Khazraji, chief of staff of the Army, and carries his injunction on the cover sheet that this publication was intended for "the training of the members of the Armed Forces, who are all to pay close attention to its precepts."[116]

The prospects for mutual deterrence were seen as limited in this manual, perhaps based on the experience of the Iran-Iraq War, in which both sides used chemical weapons, rather than being deterred from their use. The manual stresses that if two countries both have nuclear weapons, they might deter each other from using that capability, but this being the case was far from certain. If both combatants have nuclear weapons, while mutual deterrence might place limits on the size of the weapons used and the area affected, the manual assumes that, in and of itself, possession of nuclear weapons by both sides will not deter their battlefield use: "As long as one or both of the contending camps has nuclear weapons, the threat of their use will continue."[117] The manual anticipates the potentially widespread

use of nuclear fires—requiring substantial nuclear arsenals—in an expected escalation: "The battlefield, which is for now free of nuclear activity, may transform itself into an arena full of nuclear explosions."[118]

The underlying premise of Iraq's doctrine as developed in this publication was that escalation to nuclear war would be almost automatic and should be expected: "Ordinarily, there is no clear, distinct boundary between the conditions of nuclear war and nonnuclear war as long as both contending sides or one of them possesses nuclear weapons."[119] However, at the same time, the possibility—however unrealistic— of a de-escalation from nuclear warfare in a controlled manner in a subsequent phase of a war is envisioned and might occur even after initial intensive or unlimited nuclear exchanges because of practical concerns, such as "a diminution of the two belligerent parties' ability to produce and deliver nuclear weapons."[120]

To be sure, this manual recognized that massive casualties could result from nuclear strikes among the military and the civilian population on both sides, which "might be a means of deterrence against the use of nuclear weapons, with neither side willing to accept such casualties."[121] However, what was seen as a more plausible—if unrealistic—way to avoid massive casualties was a form of partial control, placing only some limitations on the use of nuclear weapons: "These limits may include the restriction of geographic areas in which the use of nuclear activity is permitted or the determination of the maximum size of nuclear weapons with atmospheric explosions only."[122] Nuclear exchanges might occur even when states have only limited nuclear arsenals and in that case, optimistically, "conditions quickly return to their normal situation."[123]

Doomsday Weapon or Warfighting Tool?

The Iraqi focus on warfighting in itself diluted more conventional deterrence, and in this manual, nuclear war was portrayed as feasible and reasonable, suggesting overall a lower than expected threshold for the use of nuclear weapons. To that end, Iraqi doctrinal publications in general sought to downplay the destructive potential of nuclear weapons and to provide guidance to military commanders to

"get rid of the imaginary ideas and the fanciful notions which some people's heads contain to the effect that nuclear weapons are doomsday weapons (*silah mutlaq*) and that combat is impossible if they are used."[124]

Military commanders were also directed to "stress that a defense can reduce losses resulting from their [nuclear weapons'] destructive effects to a minimal level, and that armies will fight nuclear wars in the future."[125] Furthermore, according to this Iraqi doctrinal approach, "it must be stressed to the troops that a single bomb cannot destroy more than a single unit," and the casualties from the atomic strikes in Japan were dismissed as resulting "from fires, from the ignorance of the inhabitants of the cities, and from their surprise at the enemy's use of a new weapon for the first time in history."[126]

Iraqi awareness of the destructiveness of nuclear war over the years does not seem to have increased, as there are notes from Iraqi military briefings already from 1976 on the effects of nuclear weapons that had a similar thrust of reassurance, concluding that protection was relatively simple and effective and claiming that "a soldier at a distance of 3,200 yards should have no fears from a nuclear blast and from the dangers of that blast."[127] Perhaps Iraq's successful experience during the Iran-Iraq War with fighting on a battlefield where chemical weapons were used may have emboldened the Iraqi military to assume that the same experience could be replicated with nuclear weapons.

As noted, the level of analysis of the doctrine in this manual remains, intentionally, at the operational and tactical levels. Realistically, the difference among the levels of war in the nuclear arena may well be more theoretical than actual, given the destructive power, speed, and decisive effects that nuclear weapons can have, and such distinctions in the nuclear field may be even less clear-cut than in conventional wars. However, the explicit intent to focus at the tactical and operational levels does indicate a readiness to envision nuclear weapons on the battlefield and points to a considerably lower nuclear threshold than might otherwise be the case. The very existence of this doctrinal manual indicates that the Iraqi Army saw nuclear weapons very much as a practical warfighting tool to

be used on the battlefield, both in the defense and in the offense.

In fact, nuclear weapons are seen as an element to be integrated fully into the battle in conjunction with conventional forces. For example, on the offensive, the conventional forces of choice on a nuclear battlefield are seen as small mobile units, including heliborne forces, which can maneuver independently and can operate over a wide area in combination with supporting nuclear fires. Armored forces are also seen as appropriate in this environment, because of their mobility, firepower, and relative degree of force protection (or as the manual terms it, "partial protection").[128]

Tactically, nuclear weapons are even said to resemble conventional weapons in some ways, being no more than bigger artillery: "Ordinarily, nuclear fires are used in the same way and with the same objectives for which nonnuclear fires have always been used."[129] Specifically, the stated intent of this warfighting function is that "nuclear fires will be used just as other artillery fires, with the goal of destroying or paralyzing enemy positions and to hinder and harass the enemy's operation [by which he intends] to recover his combat effectiveness."[130]

Rather than just remaining at a general descriptive level, in many instances the doctrine in this manual becomes prescriptive and spills over into detailed tactics, techniques, and procedures, with a very practical "how-to" focus, indicative of an expectation of the applicability of this doctrine in the not-too-distant future. For example, formats are provided in the appendices for staffs in preparing nuclear fire plans, operational orders, and requests for nuclear fire support that highlight the applied thrust of this manual.

Since Iraq did not possess nuclear weapons at the time, or at any time thereafter, the drafting of such a doctrine was still clearly anticipatory. Nevertheless, even the fact that such doctrine existed is in itself highly suggestive of Iraq's objectives and expectations in this arena. As this doctrinal manual was not in the public domain, in no way could it be viewed as having been intended to be a conscious contribution by Iraq to strategic deterrence, in the sense that Iraq might have wanted potential

adversaries to see the document as an indication of Baghdad's readiness to employ nuclear weapons that might cause them to be more wary about confrontation. Moreover, the approach to the use of weapons of mass destruction in war as reflected in other Iraqi Army doctrinal and operational documents indicates that this manual was very much integrated in mainstream Iraqi military thinking, rather than being an isolated low-level think piece. In a way, this was a capstone document, presenting nuclear doctrine as a cohesive whole, while numerous other doctrinal publications contained more concise judgments or addressed specific elements related to this topic.

That this doctrine carried the highest military approval authority reinforces the perception of a top-down conceptual diffusion in the Iraqi Army, with a common approach to be reflected in doctrine and operational plans at all levels. In addition, the fact that the July 1988 version was already the third edition suggests that the Iraqis may have been thinking about this issue for some time. Indeed, an Iraqi doctrinal publication highlighting the operational use of weapons of mass destruction—as well as those of a radiological nature—had existed at least by 1984.[131]

Likewise, the prospect of nuclear war had also become more routine, and the unintended escalation of conventional conflicts into nuclear ones was seen as a distinct possibility. For example, a section entitled "Conceptualizing the Eruption of a Nuclear War" in a briefing found in the Iraqi Army's archives posits that wars could easily escalate to the nuclear level, with the document presenting two scenarios about how this could unfold: "A war may begin with conventional weapons, but if both sides possess nuclear weapons and if one of them loses the capability to operate in a conventional war, it may have recourse—in a desperate attempt—to nuclear weapons in order to maintain the balance."[132]

The same document also envisions a lower-level confrontation escalating into a limited or general nuclear war. And the briefing raises what it sees as a very difficult, but key, tactical dilemma: whether to mass or disperse in preparation for going nuclear in order to achieve "a decisive outcome."[133] The brief also blithely

expresses optimism about the Iraqi Army units' ability to operate on such a battlefield "because they have plenty of protective gear and means of detection, as well as special systems (*mandhumat*) to counter these weapons."[134]

Saddam's Mirror Imaging of Adversaries

Indicative perhaps of Saddam's own penchant for "mirror imaging," his belief that others—and Israel, in particular—approached the issue in terms similar to his own (including at the operational and tactical levels) no doubt reinforced his hawkish view of nuclear weapons. Some Iraqi analysts saw the use of nuclear weapons on the battlefield as something to be expected, attributing this intent to Israel, and sketched some plausible scenarios. Specifically, these Iraqi analysts assumed that Israel had at least considered using nuclear weapons during the 1973 War, had the situation on the ground deteriorated significantly to Tel Aviv's detriment.[135]

The *Babil* study of 2003, for its part, still viewed Israel as prepared to use nuclear weapons on the battlefield and assessed that capability as having considerable utility, indicating little development in Iraqi thinking over the years on this key issue. According to this study, by using tactical nuclear weapons, Israel would be able to achieve a major advantage in operational terms, "since the Zionist entity would then gain the initiative and transition to the offensive on the front against which it launched its nuclear strike." Israel could even initiate a preemptive nuclear strike with tactical weapons as "strategic defense" in case it expected a multifront Arab attack, or it could strike "large civilian targets if there is a threat to the Zionist entity within the borders of occupied Palestine." Use of tactical nuclear munitions, according to the study, would be enough to halt any Arab attack and force the other parties to negotiate "on conditions favorable to the Zionist entity."[136]

Likewise, the Saddam regime also considered the United States' use of nuclear weapons against Iraq, both during the confrontation of 1990-91 and before the looming war of 2003, as a realistic possibility. The Iraqis believed, for example, that Secretary of State James Baker had warned them in no uncertain terms that the United States would contemplate using nuclear weapons to retaliate if Iraq used

chemical weapons.[137] At the time, the Iraqi press was filled with information on civil defense against a potential U.S. or Israeli nuclear strike in order to prepare the public.[138] Given the potential to create panic and undermine civilian morale, such a move on the part of the Iraqi government would not have been likely unless an attack appeared to be a realistic possibility.

In practical terms, this assumption of a probable nuclear battlefield, in light of the perceived low threshold for the use of such weapons, induced Iraqi units in the field during Operation Desert Shield to generate specific plans for damage control resulting from a nuclear strike, presumably by the United States, in response to directives from higher echelons.[139] Again, in the run-up to the 2003 war, the Iraqi press noted that the United States recently had abandoned its view of nuclear weapons simply as a deterrent, and predicted as a result "a feverish international arms race with weapons of mass destruction" and wondered what scenarios might prompt the latter to unleash its nuclear weapons against Iraq.[140] Another article in the Iraqi press likewise suggested that the United States might use nuclear weapons to destroy Iraqi bunkers if its forces were obliged to set up sieges around cities, rather than forcing their way in.[141] In fact, according to Iraqi military officers, in April 2003, Saddam and his son Qusayy had ordered them to warn their troops that the United States would use nuclear weapons against Baghdad, although this ploy may also be seen as another instance of bad judgment, helping to depress Iraqi morale even further.[142]

The Combat Use of Nuclear Weapons: How Likely?

Saddam as Decision Maker

Ultimately, the key question is whether Saddam actually would ever have used nuclear weapons, either strategically or on the battlefield. Unquestionably, the decision would have been up to Saddam himself, and it is not likely that there would have been effective dissident voices at such a time. Indicative of his intolerance of disagreement and his paranoid outlook, Saddam had Riyadh Ibrahim, his Minister of Health, executed when the latter expressed less than

complete support during the Iran-Iraq War.[143] Even more to the point, opposing Saddam on the use of weapons of mass destruction would also have been dangerous and unlikely. When General Al-Bariq Al-Hajj Hinta, a hero from the Iran-Iraq War, refused to use chemical weapons against the Kurds, Saddam reportedly had had him killed.[144]

In general, Saddam's governing style ensured that only positive—but often false or exaggerated—information reached him, skewing his ability to make sound and timely decisions.[145] Such distorted information included reports of exaggerated progress and capabilities in the nuclear field, which may have made his ability to act with the agility required when conducting a policy of nuclear deterrence more difficult.[146]

Saddam's Calculus

To be sure, Saddam's decision to use nuclear weapons need not have been automatic or unavoidable when and if Iraq had acquired such a capability. Saddam, admittedly, was a pragmatist and anything but suicidal, and he could show flexibility if his cost-benefit calculus indicated such a course of action.[147] For example, in light of the clear imbalance of power and his preoccupation with the Iran-Iraq War, he had thought it prudent to forego a direct response to Israel's attack on the Osirak reactor, to the dismay of more bellicose Arab figures such as Yasir Arafat, a decision which must have caused Saddam considerable embarrassment at home and in the Arab world.[148] Likewise, in 1998, at the time of another Iraqi confrontation with the United States, Saddam reportedly was careful to communicate to Israel that he had no intention of launching missiles at it.[149]

As had been the case with its chemical weapons, Saddam's use of nuclear weapons would probably have been scenario-dependent. Indeed, Saddam's decisions in such areas as who would control the launching of nuclear weapons might have overridden specific elements contained in doctrine. Almost assuredly, the final say would have remained with Saddam. For example, during the early phases of the Gulf War, Saddam ensured that he would personally control initiating the use of

chemical weapons, rather than delegating such authority to lower echelons. Thus, an order dated 20 September 1990 and classified top secret from the commander of the 27th Infantry Division reminded subordinate units that "the use of the chemical effort will not occur except by order of the supreme commander (*al-qaid al-amm*)," citing an order sent by the Office of the Chief of Staff of the Iraqi Army on 12 September 1990.[150]

A key element of his decision would have been whether Saddam believed the use of such weapons was necessary in the situation. For example, although Iraq had developed a binary chemical weapon by 1988, the Iraqis had not used it against the Iranians, no doubt because, by that time, Iraq's conventional weapons superiority was assured.[151] And, although Saddam had used chemical weapons on numerous occasions in the Iran-Iraq War and against the Iraqi Kurds, he did not use that capability during the Gulf War, most likely deterred by factors such as the expected disproportionate retaliatory capability of the United States or Israel, the perceived operational difficulties of the Kuwait theater of operations, or the fear of personal pursuit that could have been sparked by such a decision.[152] However, had Saddam perceived a more favorable cost-benefit balance—especially against a nonnuclear power—or a need to retaliate for a devastating regime-threatening blow, he might have been more tempted to use even nuclear weapons.

During the Gulf War, when Saddam reportedly sought to develop at least one nuclear weapon, an Iraqi nuclear scientist concluded, "This guy [Saddam] intended to use it during the Gulf War. We just didn't deliver it; that's what stopped him . . . they wanted it mounted on a long-range missile . . . which means it was meant for Israel, most probably."[153] The Iraqi scientific community, as was true of any observer, could only speculate as to how, or whether, Saddam would actually have used nuclear weapons. Some scientists, such as Numan Al-Naimi, were not sure at all.[154] Husayn Al-Shahristani was also unsure how nuclear weapons might have been used, especially against foreign adversaries, but was confident that Saddam would have used them against domestic enemies, as he had done with chemical weapons, although that situation appears unrealistic.[155]

Yet another nuclear scientist, Asad Al-Khafaji, for his part, reports that at a graduation ceremony for Iraqi military officers in 1980, Saddam had said openly, "It is on Tel Aviv that we will drop the atom bomb—which the West is accusing us of developing to be used against Khomeini's Iran—when we really finish developing it."[156] Based on the crash program, which Saddam ordered after invading Kuwait, Mahdi Obeidi believes that with only one atom bomb possible, if any, it only might have made sense to use it in a desperate strike against Israel. He judged that "nothing was beyond Saddam" and that he would have used such weapons against anyone.[157]

Moreover, it is not farfetched to assume that, in a situation such as that during the Iran-Iraq War, which at times proved exceptionally frustrating for the Iraqi leadership, Saddam might have decided to use nuclear weapons, had they been available. Hard-pressed Iraqi field commanders during the Iran-Iraq War, not surprisingly, looked to those weapons to shore up their precarious positions. One division commander, for example, after a successful Iranian offensive, asked Asad Al-Khafaji, "Doctor, when is your organization going to intervene to decide the issue?" What he was asking, as Al-Khafaji understood it, was when they would be able to attack Iran with nuclear weapons.[158] Another senior officer, a lieutenant general and chief of staff of a corps in the Iraqi Army during the Iran-Iraq War, for his part, believes that Saddam would have used nuclear weapons against the Iranians had they been available. "Of course. Saddam would have used anything he had, including nuclear weapons. He was faced with a problem of Iranian numbers and was willing to use everything."[159]

Saddam's now-celebrated meeting with U.S. Ambassador April Glaspie in the run-up to his invasion of Kuwait in 1990 is also suggestive in this respect. According to the Iraqi transcript of the session, Saddam supposedly told his interlocutor that had the United States been in Iraq's position, it would not have been able to risk 10,000 casualties in order to stem a successful Iranian breakthrough in the recently ended Iran-Iraq War, and it would have then resorted to nuclear weapons instead.[160] Saddam's assumption on that score could indicate that he, too, might

have made that choice had he been faced with such a dilemma and had nuclear weapons at his disposal.

The Size of the Arsenal: How Much Is Enough?

Goals and Possibilities

How large a nuclear arsenal did Saddam want eventually and was it realistic for him to believe that Iraq could produce enough weapons to implement an effective nuclear strategy in diverse contexts? The acquisition of nuclear munitions delivered on the battlefield by air and artillery, as envisioned in the doctrinal manual described above, would have required a complex and large nuclear arsenal, which was well in the future for Iraq even if all had proceeded as planned. The manual does, however, suggest that such an arsenal would be the ultimate goal. Possessing one bomb or even a handful, though significant, would have limited Saddam's possibilities for maneuver, though it would still have had a psychological impact. Iraq Survey Group head David A. Kay reported that Iraq had set the goal of producing 20 bombs a year. According to Mahdi Obeidi, after he and his team had achieved their breakthrough in enrichment by means of centrifuges in 1990, significant amounts of fissionable material could have been produced and the nuclear program eventually "could have given Saddam hundreds of bombs."[161]

Numerical Parity Does Not Matter: Iraq's Assessment of Other Cases

However, as Iraqi observers stressed, having a numerically equivalent arsenal was not necessary to generate significant political effects and to have a disproportionate impact. It seems that Saddam's assumption had been that Iraq could deter the United States with a small nuclear arsenal. In effect, Iraqis in influential circles were convinced that nuclear weapons in the hands of regional states could deter even superpowers.

The North Korean example was instructive for the Iraqis, who interpreted the latter's development of nuclear weapons as equivalent to establishing an effective

deterrent against the United States. An editorial in the official daily newspaper, *Babil*, run by Saddam's son Udayy, claimed that North Korea had used its newfound nuclear capability to threaten to "turn the entire Korean region into a pile [of ashes]" and had warned that "the [South] Koreans will not survive a frightening nuclear tragedy." This, it was said, had deterred the United States from aggression and had convinced the latter to negotiate during the latest standoff, favoring Pyongyang's goal of extracting a promise of nonaggression from Washington.[162] Another editorial in *Babil* praised North Korea for pursuing a nuclear weapons capability in response to the United States' alleged blackmail and attempts to impose its hegemony and concluded that "[North] Korea had every right to acquire the same technology which the American leadership had used to obliterate the Japanese cities completely."[163] Claiming that the Arabs "are the most exposed to blackmail and humiliation from the Zionist entity and all the American administrations," the same editorial concluded that "The Korean lesson is worthy of the Arabs' careful consideration."[164]

Iraqis stressed the utility of North Korea's nuclear capability, regardless of its not being equivalent to the United States' arsenal. According to this view, developing a numerically equivalent nuclear arsenal to that of another country was unnecessary for deterrence to be effective. Rather, sufficiency was to be interpreted as functional equivalency. Moreover, the effectiveness of a supposed deterrent would not require that Pyongyang even be able to reach the continental United States, but only that it be able to threaten the United States' regional friends and interests, according to an unsigned article in the "Studies" section of the *Babil* website.[165]

Delivery and Credibility

Of course, even had Saddam acquired nuclear weapons, a lack of delivery means would have prevented establishing credibility. Fortunately for Saddam, Iraq's pursuit of long-range surface-to-surface missiles and aircraft able to reach Israel was considerably further along than that for the bomb itself. By 1990, the commander of the Iraqi Air Force and Air Defense, Staff Pilot Major General

Muzahim Sab Hasan, in fact, boasted that "we will not hesitate to destroy any target within 'Israel.'"[166] In addition to the Al-Husayn, a Soviet-origin Scud with an extended range of 600 km, Iraq also possessed the Al-Abbas, (900 km range), and work was progressing on the Al-Hamza, (1,200–1,500 km range) and on the Tammuz, (which was related to the Al-Abid, Iraq's space launch vehicle) with a range of 2,000 km, and indicative of Iraq's ultimate broader horizons.[167] According to Husayn Al-Shahristani, the Al-Abid was specifically developed to carry a nuclear warhead.[168] He estimated that the Al-Abbas and Al-Abid would have gone into production by 1993.[169]

A Maturing of Iraq's Perspective?

Maturation and the Superpowers

True, one might reasonably posit an evolution in thinking by new nuclear powers, similar in its trajectory to that which occurred in the United States and the Soviet Union, leading eventually to a more stable and ultimately less violent competition than would otherwise have been the case. Saddam's thinking, too, might have matured once Iraq became a nuclear power, based on exercises and tests with real weapons rather than theoretical constructs for doctrine. A case in point, the Iraqi doctrinal manual on nuclear warfighting cited above reflects doctrine that was several generations behind that in use at the time in the United States. In some instances, there are internal contradictions and what one might argue are crude or simplistic judgments, as well as a sense of unjustified authoritative confidence, characteristic of an illusory assumed mastery of new concepts and situations and of an incomplete awareness of all relevant parameters.

Admittedly, the United States, too, had displayed a similar readiness to fight on a nuclear battlefield in the 1950s, with President Dwight D. Eisenhower's "New Look" and the emphasis on atomic weapons and massive retaliation as a cost-effective means of providing for the national defense. However reluctantly, the U. S. Army had even begun to reorganize itself partially into what came to be known as the "Pentomic Army," with the specific intent of being able to fight on a nuclear

battlefield.[170] With the advent of the John F. Kennedy administration, however, a rapid and pronounced shift away from an unpopular tactical nuclear focus in organization and doctrine occurred and, while this aspect was retained as a possibility in subsequent doctrine, a clear distinction was made between nuclear and conventional war, with a focus on the latter.[171] Yet, indicative of the nonlinearity of the evolution of such thinking, even in the United States, was the fact that on more than one occasion during the Vietnam War, the use of nuclear weapons was at least considered.[172] And, even more recently, the George W. Bush administration reemphasized prominently the United States' right to the preventive use of nuclear weapons in selected situations and reportedly considered using nuclear weapons to eliminate Iran's emerging nuclear infrastructure.[173]

Soviet thinking, for its part, had continued to envision a nuclear battlefield throughout the 1960s as a normal environment and, not unlike the doctrine in this Iraqi manual, emphasized the offensive exploitation of nuclear weapons combined with conventional arms, surprise, tempo, and readiness to operate in a nuclear environment.[174] However, by the 1970s, and more fully in the 1980s, with the rise of Marshal Nikolai Ogarkov and others, who argued that battlefield nuclear weapons no longer made sense given the anticipated costs and potential alternative means, Soviet views on deemphasizing tactical nuclear weapons came more into line with those of the United States.[175]

Iraqi Thinking: A Different Trajectory?

Overall, one gets the impression that Iraq's approach to nuclear war mirrored, in many ways, thinking from a bygone era in the United States, with early U.S. writings still being used by Iraq as a source of inspiration. For example, an Iraqi textbook on WMD (unquestionably written in the 1980s) used at the Iraqi Military Academy featured an illustration for decontaminating one's body after a nuclear attack that was taken from a U. S. Army field manual published in 1953.[176] By the late 1980s, when the main Iraqi doctrinal manual was published, the thinking upon which it was based had largely gone out of favor in both the United

States and the Soviet Union; one cannot assume that the same sophistication and restraints that had developed over the years by the two superpowers would also have applied to Saddam and to the Iraqi military decision makers at the time or in the future.

As Richard K. Betts notes, decision makers, of necessity, formulate paradigms or models, whether consciously or unconsciously, to make sense of problems and organize and interpret relevant information to enable them to make decisions.[177] Realistically, a leader's paradigms, once established, are hard to dislodge even in the face of contradictory evidence, something that Robert Jervis terms "premature cognitive closure."[178] If the original paradigms, as in Saddam's case, are based on enduring questionable assumptions or misperceptions using faulty or incomplete information, the result is likely to be flawed policies.

Saddam's thinking about nuclear weapons in Iraq might have evolved over time. However, he did not seem to have been maturing in his approach to this matter over the admittedly short span when the issue of nuclear weapons was salient to the country, in part perhaps because he was never presented with the reality of nuclear weapons in the Iraqi arsenal.

The parameters within which Saddam evaluated threats and formulated strategic objectives skewed his decision-making process, and there would certainly have been a long and tortuous period of "learning," marked by uncertainty and ample potential for missteps of tragic proportions. Ultimately, observers might have been justifiably uncomfortable with Saddam's proven willingness to use other WMD—specifically, chemical weapons—on the battlefield under the appropriate circumstances. Based on his propensity to miscalculate, he might well have repeated this course of action with nuclear weapons, especially as he would have had no practical experience or reliable roadmap from other countries in a similar context as Iraq.

Preparing to be a Nuclear Power

Waiting for Nuclear Weapons: Iraq's Window of Vulnerability

Creating a Nuclear-Free Zone

Although there is no consensus as to when Iraq would have developed and fielded nuclear weapons of its own (See Appendix), until it could do so, Saddam no doubt viewed Israel's nuclear monopoly as a worrisome threat. One counter that he attempted during this period of vulnerability was to use Iraq's future potential for obtaining nuclear weapons as a bargaining chip to pressure Israel to agree to relinquish its own WMD as part of a WMD-free zone in the Middle East. For example, in a 1990 interview, when asked whether the United States suspected that Iraq was seeking nuclear weapons, Saddam asked rhetorically, "Is it wise to wait for Iraq, or Egypt, or Syria, or Tunisia to acquire the atom bomb. . . . Nuclear bombs facing off against a number of Israeli nuclear bombs, is that better? Or is it better if Israel were not permitted to possess chemical, biological, and nuclear weapons?"[179] Insofar as its implementation would have resulted in an Iraqi advantage by neutralizing Israel's existing nuclear arsenal, Iraq might have been genuine in its calls. However, given the extremely limited prospects of Israel's agreement, especially in light of the mounting tensions between Israel and Iraq in the late 1980s, this was in all likelihood more of a publicity effort than a realistic initiative on Saddam's part.

Interim WMD: Binary Chemical Weapons

At the same time, during Iraq's fretful quest to find a response to Israel's nuclear weapons threat and set against the background of the confrontation with Tel Aviv over Iraq's nuclear program, Saddam also seemed to indicate that deterrence had been achieved by 1990 with his announcement that Iraq possessed binary chemical weapons and surface-to-surface missiles (SSMs) able to reach Israel. Whether he or other Iraqis genuinely believed in the equivalence of nuclear and chemical weapons or whether the bluster, with its menacing tone, was intended to serve as a temporary deterrent and to enhance Saddam's image at home and in the region,

at the time Iraqis portrayed Israel's nuclear arsenal as having been essentially neutralized, echoing Saddam's conclusion that "We do not need a nuclear bomb, because we have binary chemicals."[180] According to the military press, the result of Iraq's acquisition of binary chemical weapons was that Israel's "weapon of 'technical superiority' has been eliminated in fact and in practice."[181] The Iraqi mass media followed suit, noting that even Israeli officials allegedly believed that "Israeli technical dominance no longer exists today and that the technological and military balance is now in favor of the Arabs."[182] Indeed, the Iraqi Ministry of Defense's official journal now labeled Israel a "paper tiger," since the situation had changed "with the existence of the binary chemical weapon . . . whose fires can burn half of the Zionist entity if the latter attempts any attack against Iraq," even if "Israel threatens Iraq and the Arabs with nuclear weapons."[183] As Saddam himself told a visiting American journalist in 1990, "I said the following clearly . . . if Israel thinks that it is able to use nuclear weapons just because it has them, it must remember that Iraq has binary chemical weapons, which are capable of causing [Israel] great harm."[184]

No Substitute for Nuclear Weapons

Presumably, Saddam viewed chemical weapons as only a temporary stop-gap shield in anticipation of a preferred expected nuclear capability. After all, both Iraq and Iran had used chemical weapons in combat during their recent war, suggesting that they might not be an effective deterrent after all. Saddam seemed to acknowledge that Iraq was making a virtue of necessity in this respect, recognizing the superiority of nuclear weapons: "how can you expect Iraq not to use chemical weapons in confronting atomic bombs belonging to a party which picks fights and which continuously threatens the Arab nation and Iraq? Is it nuclear weapons or chemical [the original has an obviously erroneous "hydrogen"] weapons which are the more destructive?"[185] Indeed, the conclusion of the 2003 *Babil* study was that, ultimately, the same weapon would be required to counter Israel's nuclear threat: "It is clear from the preceding [discussion] that the extent of the dangerous threat which the Zionist nuclear strategy represents for the Arabs is a matter which, as

a corollary, mandates the need to prepare for that threat by developing the same military arsenal as [the other] states in the region have … in order to confront the looming Zionist nuclear threat."[186]

Whatever assumptions there may have been in a moment of hubris about Iraq's ability to deter nuclear weapons after Saddam had announced that Iraq had binary chemical weapons, when the Desert Shield confrontation developed, Saddam was probably much less certain that chemical weapons alone could deter nuclear strikes. Tariq Aziz, for example, wondered publicly in a press conference: "'Israel' has nuclear weapons and you cannot give me assurances that 'Israel' will not use them against us or against other Arabs."[187]

The Iraqi Army, too, had regressed to the assumption that nuclear weapons might well be used against its fielded forces, implying recognition that whatever chemical weapons were available in Iraq's arsenal, they simply were not enough to deter a potential nuclear attack. In fact, following Iraq's invasion of Kuwait in August 1990, Baghdad even reportedly accelerated its nuclear weapons program, according to more than one Iraqi nuclear scientist. A few days after the invasion of Kuwait, Husayn Kamil—Minister of Military Industry and then responsible for the nuclear program—delegated Jafar Diya' Jafar to combine the efforts of his establishment with that of Mahdi Obeidi, to initiate a crash program intended to produce a bomb. Obeidi assessed that "The crash program showed his [i.e., Saddam's] desperation for a single atomic weapon, a crude bomb."[188]

Would Saddam Have Revived the Nuclear Program?

Saddam and his coterie seem to have persisted in seeing great utility in having nuclear weapons, as suggested by their perception of the putative benefits to North Korea in developing even an embryonic nuclear weapons program. Iraq had continued after the Gulf War to monitor progress by other countries in developing their nuclear programs, with a particular interest in how they managed to do so despite pressure by the United States.[189] In light of the continuing Iraqi appreciation for nuclear weapons, it is at least a valid question as to whether

Saddam would have revived his pursuit of a similar capability if conditions had permitted him to do so once again. Based on available reports, Saddam would probably not have abandoned his conviction about the benefits of having a nuclear arsenal, and would have remained committed to pursuing that goal. A nuclear capability would have made particular sense in the wake of the Gulf War, considering the serious weakening of Iraq's conventional warfighting capability and Saddam's need to maintain his threatened regional position.[190]

In that vein, Tariq Aziz, in his debriefing with U.S. authorities, confirmed that "Saddam was fully committed to acquiring [nuclear weapons] despite the absence of an effective program after 1991."[191] Mahdi Obeidi, by then director of projects for the entire Ministry of Military Industry, also now believes that "Saddam would have seized the first opportunity to make nuclear weapons as the opportunity arose."[192] That was also the impression of Saddam's principal interrogator after his arrest, who concluded that Saddam "wanted to reconstitute his entire WMD program."[193]

After the Gulf War, Saddam reportedly did revive his support for the experts from the stopped nuclear program, especially after the inflow of money from the Oil for Food Program, beginning in 1998, but their focus was directed to teaching or to ancillary basic research.[194] In the wake of the wartime destruction during the Gulf War and the ensuing inspections and sanctions, Mahdi Obeidi believed that the nuclear program simply could not be reconstituted, although the plans, technical knowledge, and personnel remained.[195]

Subsequent revelations about the extent of the nuclear network developed abroad by Pakistani nuclear scientist Abdul Qadeer Khan and others suggest that an unfettered Iraq might have been able to find willing suppliers of assistance in this field if the sanctions had eroded significantly due to international pressure.[196] What is more, as was the case with Libya, shortcuts in nuclear development might have been possible, to include the acquisition of nuclear weapons designs abroad.[197] Moreover, the sanctions which the United Nations had imposed on Iraq after the Gulf War grew to be increasingly unwelcome in regional popular opinion, where

they were seen as causing hardships to the Iraqi population.[198] And, at the same time, other countries, such as Russia, China, and France, appeared eager to reestablish their earlier economic relations with Iraq.[199]

Nevertheless, despite a more complicated political environment, the sanction regime was re-energized in May 2002, when a new "smart sanctions" program was instituted, largely due to concerted U.S. efforts. This new system relaxed controls, but only over non-military imports, while more intrusive international inspections were resumed. Under the circumstances, Saddam would likely have found it well beyond his capabilities to reestablish his nuclear program for the foreseeable future, although he presumably would have probed for opportunities to do so.

Conclusions

Overall, the Iraqi case study indicates that the trend toward nuclear proliferation may be potentially even more worrisome than is sometimes thought. As a corollary, continuing vigorous international efforts to halt or slow proliferation are highly desirable.

Confidence in replicating the Cold War stabilizing influence of nuclear weapons is misplaced. Not only may the context be specific to individual countries but, in particular, such weapons in the hands of leaders whose calculus and decision-making styles may differ substantially from those of their superpower counterparts during the Cold War may entail a strong possibility of increased miscalculation and a lower threshold for their use.

Specifically, several conclusions can be drawn from the preceding analysis of Saddam's views and policies on nuclear weapons.

Avoiding Mirror-Imaging—Leadership Matters

First, the Iraqi case highlights how risky it may be to mirror-image another country's perceptions and intentions, especially in the realm of nuclear weapons where there are limited historical precedents. That is, to extrapolate the history of

U.S. and Soviet perceptions, intentions, and policy with regard to nuclear weapons and their role in deterrence, and then to apply that to Saddam's Iraq depended on assumptions which were not always valid, based on what Saddam and other Iraqis themselves said, wrote, and did. Understanding a leader's worldview—especially in authoritarian political systems where decision making may be highly personalized—is key to evaluating the perspective and potential behavior of an actual or would-be nuclear power.[200]

Some analysts have highlighted, correctly, the importance of not ignoring the impact of another country's "strategic culture" as a factor shaping strategic assessments and choices, arguing that "different states have different predominant strategic preferences that are rooted in the early or formative experiences of the state, and are influenced to some degree by the philosophy, politics, culture, and cognitive characteristics of the state and its elites."[201] Evaluating national leaders against the background of such factors as listed above, factoring in conceptual strategies in the nuclear field such as deterrence and nuclear war and enduring and less malleable givens such as history and geography, will yield a more accurate understanding of a leader's motivations, thinking, and possible utilization of nuclear weapons than will assumptions based on paradigms drawn largely from pure theory or from the experience of the superpowers.

Nuclear Deterrence May Be Uncertain and Unstable

Second, and related to the differences in leadership and strategic culture, the Iraqi case indicates that the concept of nuclear deterrence cannot be applied mechanistically, and that the relationship between deterrence and stability needs to be revaluated in a less absolute—and less optimistic—direction.

As seen from Saddam's thinking, leaders of emerging nuclear powers may conceptualize deterrence not only in a purely defensive mode, but also as a shield permitting greater aggressive activity at a lower level—what was termed "offensive deterrence" in this study—on the assumption that escalation to nuclear war may be controlled and an adversary's nuclear arsenal thus neutralized. While Saddam

was never able to implement such a policy in the absence of a nuclear capability, his aggressive perception of deterrence, with a focus on the latter as an enabling factor for further action (whether by means of political coercion or various levels of violence)—could have been highly destabilizing. A slow and non-linear conceptual learning progression could well be the norm for most emerging nuclear powers, at the very least complicating regional stability and conflict resolution and, potentially, opening up the way for catastrophic miscalculations.[202]

In particular, tangible differences from the situation during the Cold War—obstacles such as the small size of arsenals and their inherent vulnerability, limited intelligence capabilities, inefficient command and control, etc.—are likely to hinder the establishment of a stable deterrence regime in the case of emerging nuclear powers.[203] Some Iraqi thinkers were aware of these differences and did not seem to have been optimistic about the stabilizing effect of the spread of nuclear weapons. Predicting a demand for nuclear weapons by an increasing number of countries, one senior military officer, writing in the Iraqi armed forces' professional journal, for example, concluded that, as a result of proliferation, "the risk of a nuclear war erupting will increase."[204]

To be sure, by the end of the Cold War, many academics in the West were already suggesting that the mutual deterrence resulting from the great destructiveness of nuclear weapons had channeled conflict—if it did occur—to levels of a lower intensity, with some even holding that large-scale conventional wars would disappear altogether.[205] More recently, the relationship between two nuclear powers, India and Pakistan, and their apparent reluctance to escalate their confrontations into full-scale war has often been accepted as proof of this proposition and as emblematic of nuclear-induced stability. Critics have challenged such views, arguing that the acquisition of nuclear weapons by both India and Pakistan has, if anything, led to more frequent and more severe conventional and unconventional conflict between the two countries in the absence of a fear of full-scale retaliation.[206]

In fact, a strong case can be made, based on the India-Pakistan dyad, that nuclear proliferation can contribute to the actual outbreak of conflict, not just to the escalation of a confrontation.[207] True, some would have interpreted the recourse to conventional or low-intensity conflict as a positive development, but this might be valid perhaps only in comparison to a nuclear exchange, as even conflict at a lower level could be highly destabilizing and destructive. And, in the case of India and Pakistan, even though their confrontation of 2002 did not lead to war, the two countries came very close to doing so and, "so close that an accident, miscalculation, or small piece of misinformation might have touched off a disastrous conflict."[208]

Rather than being an automatic factor for stability, nuclear weapons in the hands of a revisionist leader could have the contrary effect, as suggested by the Iraqi case. The key independent variable in this regard is the specific application of nuclear deterrence, which can be used either to enhance stability or to engender a disruption of the status quo, thereby leading to a potentially dangerous escalation.

A corollary to this observation is that considerable leadership skills are required to manage the volatile brinkmanship situations which often arise as a result of a reliance on deterrence. In that respect, rather than being an absolute factor, nuclear deterrence may be only as effective and stable as the quality and orientation of the leaders who conduct it. A political system where decision making is concentrated in one individual or a small clique and debate is stifled even within government circles can raise significantly the risk of the failure of deterrence, particularly if a leader, or leadership clique, is quixotic, ill-informed, or prone to risk-taking. Understanding the orientation and psychological outlook of a leader such as Saddam assumes even greater importance in such a highly centralized authoritarian system.

Nuclear Warfighting May Be an Option

Third, an assumption that nuclear weapons would never be used in a warfighting mode may be flawed. There may well be some self-imposed restrictions on countries from using nuclear weapons but some have argued that "normative

prescriptions" have "delegitimize[d] nuclear weapons as weapons of war."[209] However, this judgment may be too sweeping, for while it may apply to a great extent to the behavior of the United States, states such as Saddam's Iraq might be more inclined to treat nuclear weapons use as more acceptable.

The somewhat cavalier and matter-of-fact perspective of a nuclear battlefield expressed in Iraqi doctrine and discourse—which other countries may share—would seem to imply an understatement of the potential destructiveness of nuclear weapons and a greater willingness to use atomic weapons that may strike an observer as particularly disconcerting. The result could well be the actual operational use of such weapons, especially against an adversary who was not similarly armed. In addition, given the different political culture and decision making and command-and-control processes which characterized Saddam's Iraq, the potential for miscalculation might have been substantially higher than was the case for the superpowers during the Cold War. Indeed, information made public recently suggests that in the 1980s Cuba's Fidel Castro was urging the Soviet Union to launch a nuclear strike against the United States until convinced by Moscow of the folly of that option.[210]

Such differences in the approach to nuclear weapons suggest the need for considerably greater caution and less optimism in evaluating the effects of proliferation, especially with respect to countries where the thinking of the leadership is just evolving or one which proceeds from an aggressive perspective with an agenda bent on altering the status quo. When accompanied by a closed and narrow-based decision making process, one cannot automatically expect the same stabilizing results as demonstrated during the Cold War.

Significantly, the senior Iraqi military officer cited above, in addressing the likelihood of the use of nuclear weapons in war, assessed that not all governments might think alike, with some having a different calculus, and he singled out in particular those governments "which do not possess a sense of the awesomeness of such responsibilities."[211] Linking this threat to the importance of leadership style—while of course not having the Iraqi case in mind and apparently not aware of the

irony—the same officer identified as a realistic risk for the use of nuclear weapons in war the case where "a very stupid individual possessed by dreams of creating an empire, one who would have recourse to all means at his disposal to achieve these dreams, took power."[212]

Even Small Nuclear Arsenals Can Be Destabilizing

Fourth, even a small nuclear arsenal in the wrong hands can be sufficient to cause significant negative consequences for U.S. interests and regional stability.

Given Saddam's perceptions and political objectives, Iraq's initial acquisition of even a few nuclear weapons could have had a disproportionate impact on U.S. interests and on regional stability. The fact that the United States' capabilities would have dwarfed any potential Iraqi arsenal should not have been a cause for complacency. The United States no doubt could have deterred Saddam—in most likely scenarios—from using nuclear weapons against U.S. forces or against U.S. territory one day in the distant future if Iraq had ever acquired long-range delivery systems. However, even here one cannot be absolutely confident that this would have been true in every scenario. Nuclear weapons might have been employed as a last-ditch attempt to ward off complete defeat. Such a capability might also be deployed as an act of revenge by a regime that is about to fall. Or, nuclear weapons might be used to inflict what is perceived as an unacceptable level of carnage in an attempt to bargain for a ceasefire. What is more, the danger of Saddam's using or threatening to use nuclear weapons in a regional conflict could have been not only more likely but also potentially more destructive, especially in light of his history of the use of chemical weapons on previous occasions.

As already noted, neighboring states might well have reconsidered their relations with the United States if Iraq had acquired nuclear weapons. While some might have drawn closer to Washington in the hope of assuring for themselves an American nuclear umbrella, others might just as easily have distanced themselves and sought to minimize the access granted to U.S. forces in an attempt to placate a nuclear Iraq and to avoid its ire.

As a corollary, Iraq's acquisition of nuclear weapons might also have spurred other states in the region to initiate or accelerate—or at least consider—efforts along the same path, either out of fear or out of a desire to emulate perceived success. This pressure for a chain reaction of nuclear proliferation may well occur in the region in a similar situation in the future.[213]

Modifying the Threat Environment Can Help

Finally, modifying the regional threat environment may alleviate the pressures for proliferation. This case study confirms the role of the domestic and regional perception of threats in stimulating, and legitimizing, Saddam's efforts to acquire nuclear weapons. What can be done in similar situations is to remove or diminish the sources of perceived insecurity which can magnify threat perceptions and serve as a potent stimulus to fuel further proliferation.[214] Such political efforts may reduce or at least slow down, if not eliminate, further proliferation. Specifically, in the Middle East, a just resolution of the Arab-Israeli issue would contribute to this effort by decreasing the perception of insecurity felt by potential nuclear powers in the region. And, a resolution would also diminish the deep-seated sense of injustice stemming from the current political situation and from the perceived unfairness of the international community's acceptance of Israel's nuclear arsenal while opposing one for any Arab country. While perhaps there is no automatic and direct linkage, de-escalating key sources of tension in the region would likely make public opinion less concerned about the need to confront Israel and, therefore, perhaps less welcoming to proliferation, and would thereby reduce the pressure on and incentive for local governments to match Israel's arsenal.

On a different plane, less public emphasis on international calls for regime change might lower the sense of embattlement which some regimes feel and reduce perceptions of outside threats to such regimes' survival. The result could be a diminished sense of urgency to develop nuclear weapons and a reduction in the pressure to attain internal or regional legitimacy by means of the development of nuclear weapons.

Overall, this study suggests that any trend toward nuclear proliferation could contribute to destabilizing effects—as was the case with Iraq—and argues for the desirability of continuing vigorous international efforts to halt or slow proliferation. It was a fortuitous occurrence, in the form of the Gulf War following Iraq's invasion of Kuwait that prevented having to actually test the impact of the eventual acquisition of a nuclear arsenal by Saddam's Iraq. Similar large-scale military means of counterproliferation, of course, may be neither desirable nor feasible in other cases, but international diplomatic and economic penalties and inducements at lower levels can also help and must be pursued.

Appendix

Projections for Iraq's Acquisition of Nuclear Weapons

Baghdad appears to have come close to acquiring a bomb, but never did so, nor did it reconstitute a capability to do so after the Gulf War. Though establishing a date for achieving a nuclear device is not possible, especially given the varying estimates by some of the same individuals over time, there is a rough consensus in retrospect among Iraqi nuclear scientists and policy makers, as well as foreign observers, that a bomb could have been made operational in the near future but for the interruption of the Gulf War.

According to Husayn Al-Shahristani, Saddam had originally set a target date of 1991 for a nuclear weapon.[215] Jafar Diya' Jafar claims, "Iraq was on the verge of producing nuclear weapons on the eve of the first Gulf War."[216] Husayn Al-Shahristani, supporting this view, claims that Iraq in 1990 was about six months away from developing its first nuclear device although, of course, weaponizing such a capability would still have been some further time off.[217] A senior adviser to Saddam Hussein, Lieutenant General Amir Al-Sadi, confirmed the general projections of this timeline, noting that Iraq had come close to building an atomic bomb by 1991.[218]

On the other hand, for Mahdi Obeidi, achieving a bomb was "a year or two" away.[219] David Kay put forward more modest estimates, even though he noted, "at the time of the Gulf War, Iraq was probably only 18 to 24 months away from its first crude nuclear device and no more than three to four years away from advanced, deliverable weapons," confirming a near-term horizon for Iraq's acquisition of at least some nuclear assets.[220] Yet another Iraqi scientist, Imad Khadduri, later also assessed that a nuclear weapon would still have required "several years" after 1990,

while Numan Al-Naimi projected that a bomb could have been ready only by 1994.[221] The CIA, for its part, in a July 1990 assessment, had estimated optimistically that Iraq could develop nuclear weapons only by the late 1990s.[222]

Notes

1. Gawdat Bahgat, *Proliferation of Nuclear Weapons in the Middle East* (Gainesville, FL: University Press of Florida, 2007), 18.

2. Andrew Flibbert offers a perceptive analysis of the enduring geostrategic factors with which Iraq has had to contend, irrespective of the regime in power in Baghdad, and the their relationship to a pursuit of nuclear weapons, "After Saddam: Regional Insecurity, Weapons of Mass Destruction, and Proliferation Pressures in Postwar Iraq," *Political Science Quarterly*, cxviii, 4, Winter 2003-04, 547–67. For additional perspectives on this issue, see Norman Cigar, *Thinking about Nuclear Power in Post-Saddam Iraq*, (Carlisle, PA: Army War College, Strategic Studies Institute, April 2010).

3. On Saddam's dominant leadership position and personalized decision-making style, see Jerrold M. Post and Amatzia Baram, "'Saddam Is Iraq, Iraq Is Saddam' (Until Operation Iraqi Freedom)," in Barry R. Schneider and Jerrold M. Post, eds., *Know Thy Enemy: Profiles of Adversary Leaders and Their Strategic Culture*, (Maxwell Air Force Base, AL: USAF Counterproliferation Center, July 2003), 163–220.

4. Jafar Diya'Jafar and Numan Al-Naimi, *Al-Itiraf al-akhir: haqiqat al-barnamij al-nawawi al-iraqi* [*The Last Confession: The Truth about the Iraqi Nuclear Program*], (Beirut: Markaz al-dirasat al-arabiya, 2005), 74. Highlighting Saddam's personal commitment, he had wept openly when he saw the damage done to Iraq's Osirak/Thuweitha nuclear complex by the Israeli air strike in 1981, Ala' Al-Adhami, "Li-madha baka Saddam ind ma qasaf al-sahayina al-mufail al-nawawi al-iraqi" [Why did Saddam weep when the Zionists bombed the Iraqi nuclear reactor?], *Al-Watan* (Anaheim, California), 8 June 2009, online at www.watan.com/feature/12486-2009-06-08-18-47-04.html.

5. The text of the *Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD* (Washington, DC: CIA, 30 September 2004) can be found on the CIA's website; online at https://www.cia.gov/library/reports/general-reports-1/iraq_wmd_2004/index.html. This document is henceforth referred to as *Duelfer Report*.

6. *Duelfer Report*, 8.

7. For an overview of the doctrinal development in the United States, see Lawrence Freedman, "The First Two Generations of Nuclear Strategists," in Peter Paret, ed., *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, (Princeton: Princeton University Press, 1986), 735–78; and Charles H. Fairbanks Jr., "MAD and U.S. Strategy," in Henry D. Sokolski, ed., *Getting MAD: Nuclear Mutual Assured Destruction, Its Origins and Practice*, (Carlisle Barracks, PA: Army War College, Strategic Studies Institute, November 2004), 137–47. For the Soviet case, see Harriet Fast Scott and William F. Scott, *Soviet Military Doctrine: Continuity, Formulation, and Dissemination*, (Boulder, CO: Westview Press, 1988), 24-25, 36–41; and John Battilega, "Soviet Views of Nuclear Warfare: The Post-Cold War Interviews," in *Getting MAD*, 151–74.

8. Post and Baram, 174.

9. Tariq Aziz, debriefing with U.S. authorities, *Duelfer Report*, 26.

10. E-mail from Imad Khadduri to the author, 9 February 2008. Humam Abd Al-Khaliq was then head of Iraq's Atomic Energy Commission.

11. Interview with Asad Al-Khafaji by Ahmad Yusuf, "D Asad Al-Khafaji: al-mashruat al-nawawiya laysat 'makiyazhan' siyasiyan li-l-hukkam" [Dr. Asad Al-Khafaji: Nuclear programs are not just political "cosmetics" for rulers], *Al-Hiwar al-mutamaddin* (no location given), 16 October 2006, online at www.alhewar.org/debat/show.art.asp?aid=78306.

12. Staff MajGen Wafiq Al-Samarra'i, *Al-Qira'at al-khati'a fi al-azmat al-iraqiya al-khalijiya al-amirikiya* [*The Misreadings in the Iraqi-Gulf-American Crises*], (n.p.:

Markaz dirasat Al-Iraq wa-l-Khalij, 1999), 128-29.

13. According to Col Valeriy Yaremenko, a Soviet military interpreter working with the air defense unit at the site of the reactor, quoted in Andrey Pochtarev, "Srazhayushchiysya 'Vavilon'" [Battling "Babylon"], *Krasnaya Zvezda* (Moscow), 24 May 2003, online at www.redstar.ru/2003/05/24_05/6_01.html.

14. Document reproduced by the 11th Infantry Division Chemical Unit, Top Secret, 26 March 1990, DIA File 524-1-021b. All the documents in this collection have been declassified.

15. Sabri Hammadi, "Iran . . . humma al-tasalluh wa-al-tamaddud," [Iran . . . Fever of an arms buildup and expansion], *Al-Thawra* (Baghdad), 20 February 1992, 2. The Iraqi media was often alarmist. One article stated as fact that the United States presented Iran with a nuclear reactor, "Amirika qaddamat mufailan nawawiyan yamal al-an fi Iran" [America donated a nuclear reactor which is now active in Iran], *Al-Thawra*, 20 November 1991, 1.

16. Ali Al-Badri, "Al-Wilayat Al-Muttahida Al-Amirikiya tukafi' Iran nawawiyan!" [The United States is rewarding Iran in the nuclear field], *Al-Thawra*, 21 February 1992, 2.

17. Speech by Saddam, "Nass hadith al-rafiq Saddam Husayn (hafidhahu Allah) khilal liqa'ih li-l-rifaq amin sirr wa-ada' qiyadat far Babil li-'l-hizb wa-qiyadat al-shab fih" [The text of the speech by Comrade Saddam Husayn (may God preserve him) during his meeting with the permanent secretary and the members of the leadership of the Babil Party branch and the people's leaders there], 14 February 1990, found in a set of handwritten transcriptions of his speeches as part of a source book for an Iraqi Army unit's Ba'ath Party political officers, *Al-Sijill al-thaqafi li-am 1990* [*Cultural Record for 1990*], unpaginated. Found in DIA File 500-2-37.

18. Iraqi News Agency, 5 June 1998.

19. For example, nuclear scientist Jafar Diya' Jafar, supports the post-Osirak version. Interview with Jafar Diya' Jafar by Ali Burdi, "La aslihat damar fi Al-Iraq wa-

khassabna al-uraniyum wahdana am 1990" [There are no weapons of [mass] destruction in Iraq, and we enriched uranium by ourselves in 1990], *Al-Nahar* (Beirut), 10 March 2004, online at www.annahar.com.

20. Oleg Grivenskiy, "Atomnaya bomba i Blizhniy Vostok" [The atom bomb and the Middle East], *Nezavisimaya gazeta* (Moscow), 21 June 2001, online at http://world.ng.ru/azimuth/2001-03-01/6_bomb.html. Grivenskiy was an official in the Soviet Ministry of Foreign Affairs and, during the 1980s, was director of the Middle East Division.

21. Grivenskiy, "Atomnaya bomba." This agreement apparently angered some Soviets, with the USSR's defense minister, Dmitriy Ustinov, commenting caustically that "The French will sell their own mothers for enough money," ibid.

22. Interview with Husayn Al-Shahristani by Nidhal Al-Laythi, "La alaqa li-'l-mufail al-nawawi bi-intaj al-qunbula wa-Isra'il antajat qanabilha min dun mufail" [There is no connection between a reactor and producing a bomb, as Israel produced its bombs without a reactor], *Al-Zaman* (London), 5 May 2004, online at www.azzaman.com/azz/articles/2004/05/05-26/858.htm.

23. Al-Shahristani, ibid.

24. See Grivenskiy, "Atomnaya bomba," ibid. At the time, in 1980, Andrei Gromyko, the Soviet Union's minister of foreign affairs, did not share the concern of his staff in the ministry over Iraq's approaching acquisition of nuclear weapons. Instead, he held that while this would cause much uncertainty in the region, it would not pose a danger for the Soviet Union, while it would create problems for Israel and the United States, ibid.

25. When one nuclear scientist, Jafar Diya' Jafar, met with Saddam in the wake of the airstrike on the reactor, the latter commented bitterly: "How is it allowed for Israel to have nuclear weapons while the Arabs do not have the right to have a nuclear research program?" *Al-Itiraf al-akhir*, 58

26. Interview with Saddam reprinted in the collection *Saddam Husayn sani wahdat*

Al-Iraq wa-bani majd al-umma [*Saddam Husayn, the Architect of Iraq's Unity and the Builder of the Nation's Glory*], ([Baghdad]: Mudiriyat al-tawjih al-manawi, n .d.), 24.

27. Abd Al-Qadir Muhammad Fahmi, "Stratijiyat Al-Sin fi siyasat al-saytara ala al-asliha al-nawawiya," [China's strategy on the policy of acquiring of nuclear weapons], *Al-Jumhuriya* (Baghdad), 1 July 1991, 3.

28. Abd Al-Rahman Inad, "Al-Qunbula al-nawawiya al-hindiya wa-kasr ihtikar al-kibar" [The Indian atomic bomb and the breaking of the monopoly of the Great Powers], *Al-Qadisiya* (Baghdad), 16 May 1994, 3.

29. "Al-Rad fi al-siyasa al-kharijiya" [Deterrence in foreign policy], part 1, *Al-Thawra al-arabiya* (Baghdad), March 1987, 36. Articles in this journal were never signed.

30. *Al-Qira'at al-khati'a*, 116-17.

31. Document found in DIA File 104-18-2.

32. *Al-Sijill al-thaqafi li-am* 1990.

33. According to Saad Tawfiq, a former Iraqi nuclear scientist, he had had no qualms about his work, because he believed it would help achieve an "equilibrium with Israel," quoted in James Risen, *State of War: The Secret History of the CIA and the Bush Administration* (New York: Free Press, 2006), 97-8.

34. Discussion by the author with Mahdi Obeidi, 25 January 2008. Dr. Obeidi was the Chief Scientist in charge of Iraq's nuclear weapons program.

35. Reported by the author's wife, a physics student in Baghdad in the 1980s.

36. According to one Iraqi general interrogated after the 2003 war, Saddam was interested in WMD because he "had an inferiority complex . . . he wanted the whole region to look at him as a grand leader." Steve Coll, "Husayn Was Sure of Own Survival," *Washington Post*, 3 November 2003, A1.

37. Published as Saddam Husayn, *Al-Umma wa-iradat al-irtiqa'* [*The Nation and the Will to Progress*], (Baghdad: Dar al-hurriya li-'l-tibaa, June 1990), 23. Copy found in DIA File 138-1-1.

38. Ibid., 19.

39. Ibid., 16, 19.

40. "Al-Ba'ath wa-l-amn al-qawmi" (The Ba'ath and national security), *Al-Thawra al-arabiya*, February 1990, 60.

41. In an article authored by "The Political Section" of *Hurras al-watan* (Baghdad), "Al-Amn al-qawmi wa-hisabat al-tafawwuq" [National security and calculations of superiority], 22 April 1990, 9.

42. Sad Al-Bazzaz, *Harb talid ukhra* [*One war engenders another*], (Amman: Al-Ahliya li-'l-nashr wa-'l-tawzi, 1992), 202.

43. Marie Colvin, "Britain's Gulf War Ally Helped Saddam Build Nuclear Bomb," *Sunday Times* (London), 24 July 1994, 1-2.

44. As he explained to an American interviewer his earlier threat to "burn half of Israel," what he had intended was that "If Israel strikes the *Arabs* or Iraq, Iraq will respond. If [Israel] uses or threatens to use [nuclear weapons], it must remember that Iraq has binary chemical weapons." Interview with Saddam by ABC-TV reporter Diane Sawyer, transcript in *Al-Iraq* (Baghdad), 30 June 1990, 3. [Emphasis added.]

45. "Al-Ilan al-qawmi wa-tahaddiyyat al-amn al-arabi" [The national proclamation and the challenges of Arab security], *Al-Thawra al-arabiya*, February 1987, 13.

46. For example, in "Taqniyat al-kiyan al-sahyuni wa-kayf nuwajihha" [The Zionist entity's technology and how we confront it], *Al-Thawra al-arabiya*, October 1989, 84.

47. Salah Al-Mukhtar, "Suudna fi alam yahbut; tawahhudna fi alam yatanathar

[Our rise in a collapsing world; Our solidarity in a disintegrating world], *Al-Iraq*, 11 March 1990, 6.

48. *Al-Umma wa-iradat al-irtiqa'*, 9.

49. "Taqniyat al-kiyan al-sahyuni," 85. A retired military officer added that "The crime of Zionism, imperialism, and Arab reaction in striking the Iraqi nuclear reactor was motivated by a desire to hinder the movement of development within our reemerging and struggling region." Abd Al-Jabbar Mahmud Al-Samarra'i, "Al Sahyun wa-Al Saud darabu al-mufail al-nawawi al-silmi" [The Zionists and the Saudi royal family struck the peaceful nuclear reactor], *Al-Iraq*, 7 June 1994, 3.

50. Fakhri Salih Al-Ani, "Saddam Husayn wa-ufuq al-thawra" [Saddam Husayn and the revolution's horizons], *Al-Jumhuriya*, 29 July 1990, 3.

51. Imad Al Jalal, "Al-Usbu al-mahalli" [The week locally], *Hurras al-watan*, 8 April 1990, 5.

52. *Al-Umma wa-iradat al-irtiqa'*, 16.

53. Ibid., 19.

54. Salah Mukhtar, "Nahnu wa-mutaghayyirat al-alam wa-sanawat al-khatar" [We, changes in the world, and the years of danger], part 16, *Al-Iraq*, 11 March 1990, 6.

55. Asad Al-Khafaji, "Takhrib al-barnamaj al-nawawi ala yad Saddam" [The destruction of the nuclear program by Saddam himself], reproduced on *Al-Iraqi Forum* online at www.aliraqi.org/forums/showthread.php?t=21631.

56. A handwritten partial transcript of the speech is found in *Al-Sijill al-thaqafi* [*Cultural Record*] of a Ba'athi Army political officer, Comrade Maj Abd Al-Latif Ahmad Atiya Muhammad Al-Sadi, DIA File 89-2-4.

57. Based on the Iraqi version of the transcript from the meeting, "Minutes of Aziz, Baker January 9, 1991 Geneva meeting," part IV, *Baghdad Observer* (Baghdad), 13 January 1992, 2.

58. Interview with Husni Mubarak by Sad Al-Silawi, "Muqabala khassa: Al-Ra'is al-misri Husni Mubarak" [Exclusive Interview: The Egyptian President Husni Mubarak], Al-Arabiya TV (Abu Dhabi, UAE), 18 January 2005, transcript online at www.alarabiya.net/program/2005/01/18/9658.html.

59. David Kay, "Iraqi Inspections: Lessons Learned," transcript of a talk for the Program of Nonproliferation Studies, Monterey Institute of International Studies, 10 February 1993, online at http://cns.miis.edu/research/iraq/kay.htm. Rumors and stories about the program apparently circulated widely among relatives and neighbors of those employees, according to the author's wife.

60. "Lan nataraja an barnamajna al-qawmi" [We will not back down from our national program], *Hurras al-watan*, May 1990, 4.

61. Staff LtGen Rad Majid Al-Hamadani, *Qabl an yughadirna al-tarikh* [*Before History Forgets Us*], (Beirut: Al-Dar al-arabiya li-'l-ulum, 2007), 232. He was commander of the Republican Guard 2nd Corps.

62. "Hikayat alimayn iraqiyayn wa-qunbulat Saddam al-sirriya" [The story of two Iraqi scientists and Saddam's secret bomb], *Al-Dawliya* (Paris), 3 August 1992, 16.

63. "Makhatir al-isha al-nawawi." The author is an otherwise unidentified Staff MajGen Kamal Muhammad Fayid, DIA File 524-1-007a. From internal evidence, it was written no earlier than 1986. There is no indication if this briefing was ever given, or to whom.

64. Ibid.

65. Ibid.

66. Ibid.

67. Ibid.

68. For example, see Kenneth N. Waltz, "Toward Nuclear Peace," in Robert J. Art

and Kenneth N. Waltz, ed., *The Use of Force: Military Power and International Politics*, 4th edition, (New York: Lanham, 1993), 527–55; Martin van Creveld, *Nuclear Proliferation and the Future of Conflict*, especially the chapter "Nuclear Weapons in the Middle East," (New York: The Free Press, 1993), 97–153.; and David J. Karl, "Proliferation Pessimism and Emerging Nuclear Powers," *International Security*, xxi, 3, Winter 1996/97, 87-119. Martin van Creveld continued to adhere to this optimist position, as in "The World Can Live with a Nuclear Iran," *Jewish Daily Forward* (New York), 24 September 2007, online at www.forward.com/articles/11673, and has argued specifically that "a nuclear Iran will lead to a stable balance of terror between it and Israel," interview with Martin van Creveld by Jovan Culibrk, "Planina i njena senka" [The mountain and its shadow], *Odbrana* (Belgrade), 15 March 2008, 59.

69. "America has lived for 40 years under the shadow of Soviet nuclear weapons . . . But deterrence worked, and America surely has the power to deter Iraq as well. And so does Israel, which has already acquired nuclear weapons." Zbigniew Brzezinski, "Patience in the Persian Gulf, Not War," *New York Times*, 7 October 1990, online at www.nytimes.com.

70. As in John J. Mearsheimer and Stephen M. Walt, *Can Saddam Be Contained? History Says Yes*, (Cambridge, MA: Belfer Center for Science and International Affairs, International Security Program *Occasional Paper*, November 2002), online at http://www.comw.org/qdr/fulltext/mearsheimerwalt.pdf.

71. See John Mueller, "The Essential Irrelevance of Nuclear Weapons; Stability in the Postwar World," *International Security*, xiii, 2, Autumn 1988, 55–79; John Mueller, "Epilogue: Duelling Counterfactuals," in John Lewis Gaddis et al, *Cold War Statesmen Confront the Bomb: Nuclear Diplomacy Since 1945*, (Oxford: Oxford University Press, 1999), 272–83; and George H. Quester, *Nuclear Monopoly*, (Edison, NJ: Transaction Publishers, 2000).

Political leaders during the Cold War itself were not always in the "optimist" camp. Indeed, during the Cuban missile crisis in 1962, President John F. Kennedy

remarked to close friends while at a party "Of course, if you think simply about the chances of history, you have to quote the odds as somewhere near even that we shall see an H-bomb war within the next ten years." Katharine Graham, *Personal History*, (New York: Vintage, 1998), 296. Others, while accepting the significance of nuclear weapons in the Cold War, have also stressed the unique features which made deterrence successful then, despite the risks of inadvertent war and escalation, and highlighting the inadequacy of the Cold War as a deterrence model for more recent situations, Stephen J. Cimbala, "Proliferation and Peace: An Agnostic View," *Armed Forces & Society*, xxii, 2, Winter 1995/96, 211-233.

72. For example, Keith B. Payne, *The Fallacies of Cold War Deterrence and a New Direction*, (Lexington, KY: University of Kentucky Press, 2001); Matthew Woods, "Reflections on Nuclear Optimism: Waltz, Burke, and Proliferation," *Review of International Studies*, xxviii, 2002, 169–89, and Henry D. Sokolski, "Nuclear 1914: The Next Big Worry," in Henry Sokolski, ed., *Taming the Next Set of Strategic Weapons Threats*, (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, June 2006), 41–50. For an insightful analysis of such countervailing positions, see Barry R. Schneider, "Nuclear Proliferation and Counter-Proliferation: Policy Issues and Debates," *Mershon International Studies Review*, xxxviii, 1994, 209-34.

73. Particularly convincing in this respect are Yair Evron, *Israel's Nuclear Dilemma*, (Ithaca, NY: Cornell University Press, 1994), and Richard L. Russell, *Weapons Proliferation and War in the Greater Middle East: Strategic Contest*, (New York: Routledge, 2005).

74. Asad Al-Khafaji, "Tawazun al-rub al-nawawi damana li-l-taawun al-silmi" [A balance of nuclear terror is a guarantee for peaceful cooperation], *Iraq al-kalima* (no place given), 17 February 2007, online at www.iraqalkalema.com/article.php?id=2975.

75. Interview with Saddam by Sawyer, *Al-Iraq*, 30 June 1990, 3.

76. Speech by Saddam at a meeting of the Council of Ministers, "Al-Iraqiyun

yazdaduna tamassukan bi-tajribathim" [The Iraqis increase their devotion to their experiment], 23 June 1981, in the Ba'ath Party's military branch's *Al-Minhaj al-thaqafi li-am 1985 li-'l-ansar* [*Cultural Program for Members for 1985*], (n.p.: Mudiriyat al-matabi al-askariya, n.d.), 89.

77. *Al-Umma wa-iradat al-irtiqa'*, 16.

78. Amatzia Baram, "An Analysis of Iraqi WMD Strategy," *Nonproliferation Review*, viii, Summer 2001, 30-31.

79. Avner Cohen and Marvin Miller, *Nuclear Shadows in the Middle East: Prospects for Arms Control in the Wake of the Gulf Crisis*, working paper, December 1990, Defense and Arms Control Studies Program, Center for International Studies, MIT, Cambridge, MA, 8.

80. Speech of 1 April 1990, Al-Sadi, *Al-Sijill al-thaqafi*.

81. Mahdi Obeidi, *The Bomb in My Garden: The Secrets of Saddam's Nuclear Mastermind*, (Hoboken, NJ: John Wiley & Sons, 2004), 135.

82. Discussion with the author, 8 January 2008. Husayn Al-Shahristani also concluded that "if the Iraqi regime had delayed the invasion of Kuwait by just six months it could have achieved a nuclear weapon and the equation would have changed." Interview with Husayn Al-Shahristani by Muadd Fayyad, "Alim dharra iraqi" [An Iraqi nuclear scientist], *Al-Sharq Al-Awsat* (London), 15 April 2001, 3.

83. Interview with Staff MajGen Wafiq Al-Samarra'i by Sami Kalib, Al-Jazira TV (Doha, Qatar), 21 February 2003, transcript online at www.aljazeera.net.

84. *Al-Itiraf al-akhir*, 58.

85. Ibid., 119.

86. BGen Najib Salih, in a discussion with the author, 21 October 2002.

87. *Duelfer Report*, 99. Two conditions which Saddam set at the meeting for Iraqi WMD use were "if the Americans attack us with unconventional, harmful types

of weapons, or at the moment we see it feasible to attack," ibid. The fact that some agents were weaponized during the Gulf War is confirmed by Gen Husayn Kamil, at one time head of Iraq's Ministry of Industry and Military Industrialization, who acknowledged as much in an interview with United Nations officials after he had defected to Jordan in 1995, 6; transcript of the interview at http://www.un.org/Depts/unmovic/documents/hk.pdf.

88. The Iraqis had communicated this to the United Nations inspectors after the Gulf War, *Duelfer Report*, 100.

89. Interview with Saddam by Sawyer, *Al-Iraq*, 30 June 1990, 3.

90. "Wazir al-difa al-iraqi yuhaddid bi-tadmir marakiz quwwat al-tahaluf" [The Iraqi defense minister threatens the destruction of the Coalition forces' positions], *Al-Ra'y* (Amman, Jordan), 12 February 1991, 20. Likewise, an unsigned article in *Al-Jumhuriya* suggested that Israeli officials were frightened of Iraq's ability to strike Israel, and allegedly quoted one Israeli as saying that "Iraq . . . perhaps has bombs which are equivalent in power to a small nuclear bomb." "Al-Sawarikh al-iraqiya hajis Tall Abib al-mumit" [The Iraqi missiles are Tel Aviv's mortal fear], 27 September 1990, 12.

91. Interview with Husayn Al-Shahristani, "Saddam yukhfi al-kathir wa-yurid taghryir kharitat al-mintaqa" [Saddam is hiding a lot and wants to change the map of the region], *Sawt Al-Kuwait* (Cairo edition), 23 May 1992, 6.

92. *Al-Itiraf al-akhir*, 319.

93. "Al-Rad fi al-siyasa al-kharijiya," 33-34.

94. Ibid., 33-34.

95. According to an unsigned article in the "Studies" section of the official Iraqi *Babil Online* website (Baghdad), run by Saddam's son Udayy, "Al-Siyasa al-nawawiya al-sahyuniya" [Zionist nuclear policy], posted as of 6 January 2003, online at www.iraq2000.com/online/derasat.htm

96. "Al-Amn al-qawmi," 8.

97. "Al-Iraqiyun yazdaduna," 89.

98. Ibid., 90.

99. Ibid., 90.

100. The order, in Saddam's handwriting, and the text of the resulting leaflet were published in *Shahadat* (Baghdad), 9 February 2011, online at www.shehadaat.inp/view_printer.asp?ID=63&AUTHOR=.

101. Al-Bazzaz, "Hal yakun li-Iran silah dharri?" part 2, 20 May 1991, 5.

102. Al-Bazzaz, "Hal yakun li-Iran silah dharri," part 1, 5.

103. Al-Bazzaz, "Hal yakun li-Iran silah dharri," part 2, 5.

104. Al-Bazzaz, "Hal yakun li-Iran silah dharri," part 1, 5.

105. Ali Al-Badri, "Li-madha al-ilan an imtilak Isra'il li-'l-taqniya al-nawawiya al-an?" [Why the announcement now that Israel has nuclear technology?], *Al-Thawra*, 11 November 1991, 2.

106. "Taqrir al-istikhbarat al-sanawi li-am 1979 an Isra'il" [Annual Intelligence Report for 1979 on Israel], Directorate of Iraqi Air Force Intelligence, Top Secret, 16, DIA File 101-6-5.

107. The alleged Israeli assessment was dated August 1982 and was distributed within the Iraqi military in April 1983, DIA File 108-10-45.

108. Stephen Lukes, *Power: A Radical View*, 2nd ed., (Basingstoke, GB: Palgrave Macmillan, 2005).

109. "Al-Amn al-qawmi," 8.

110. "Al-Siyasa al-nawawiya al-sahyuniya."

111. *Al-Thawra al-arabiya*, March 1987, 37. As an Iraqi officer put it, Israel's

nuclear deterrence was only effective because of its "resolve to use nuclear power," Staff Colonel Hazim Abd Al-Qahhar Al-Rawi, "Al-Tahaddi al-nawawi al-al-isra'ili: mafhum al-rad al-nawawi al-isra'ili" [The Israeli nuclear challenge: the Israeli concept of nuclear deterrence], *Al-Jumhuriya*, 21 July 1991, 3.

112. "Al-Siyasa al-nawawiya al-sahyuniya."

113. Ibid.

114. Ibid.

115. *Kurrasa: Al-istikhdam al-tabawi li-aslihat al-tadmir al-shamil; Al-Mujallad al-thani; al-juz' al-thani; Usus istikhdam al-asliha al-nawawiya fi al-harb* [*Manual: The Operational Use of Weapons of Mass Destruction; Volume 2; Part 2; Foundations for the Use of Nuclear Weapons in War*], 3rd edition, (Baghdad: Ministry of Defense, July 1988), DIA File 561-1-11. Henceforth referred to as *Manual 470*. This was part of the regular Iraqi Army doctrinal publications series, and carried manual number 470. As is true of doctrinal publications in most countries of the world, there is no author identified, but only the approving authority, the Chief of Staff of the Iraqi Army. For a more detailed study of this manual, see Norman Cigar, *Iraq's Vision of the Nuclear Battlefield*, Contributions to War Studies, Number 3, (Quantico, VA: Marine Corps University Foundation, 2003).

116. His subsequent claims to a journalist, after he had left Iraq in 1996, about weapons of mass destruction to the effect that "such issues were not discussed in the meetings of senior officers, and no one would mention them" ring hollow. Ghassan Sharbal, *Al-Iraq min harb ila harb: Saddam marr min huna* [*Iraq from War to War: Saddam Passed by Here*], (Beirut: Riyadh Al-Rayyis li'l-kutub wa'l-nashr, 2010), 177.

117. *Manual 470*, 40.

118. *Manual 470*, 2. This manual, in fact, begins by noting that "It is not far-fetched that the Iraqi Army will take part in a future Arab-Israeli war in which the enemy may resort to using nuclear and other weapons of mass destruction," 2.

119. *Manual 470*, 2.

120. *Manual 470*, 34-35.

121. *Manual 470*, 38.

122. *Manual 470*, 38-39.

123. *Manual 470*, 101.

124. *Kurrasat khasa'is wa-ta'thirat aslihat al-tadmir al-shamil; al-mujallad al-awwal, al-juz' al-rabi; al-tadrib al-asasi li-'l-wiqaya min aslihat al-tadmir al-shamil li-jami al-sunuf* [*Manual on the Characteristics and Effects of Weapons of Mass Destruction; Volume 1, Part 4; Basic Training for Defense against Weapons of Mass Destruction for All Branches*], ([Baghdad]: Office of the Chief of Staff; Department of Training; Division of Combat Development, August 1986), Number 321, 1st ed. Circulation Restricted to the Armed Forces, 65-66. DIA File 77-1-001. Henceforth referred to as *Manual 321*.

125. *Manual 321*, 66

126. *Manual 321*, 66.

127. Briefing entitled "Ijra'atak didd al-infijar al-nawawi" [What steps you should take against a nuclear blast], dated 25 October 1976, DIA File 130-1-1.

128. For an analysis, see Cigar, *Iraq's Vision*, 11–15.

129. *Manual 470*, 39.

130. *Manual 470*, 40.

131. *Kurrasa: Al-Amaliyat al-kimawiya wa-'l-ihya'iya wa-l-isha'iya* [*Manual: Chemical, Biological, and Radiological Operations*], ([Baghdad]: Training Command, Chemical Corps Directorate, September 1984), classified as Restricted to the Armed Forces, DIA File 561-1-1. This manual, although a translation by Staff Col Samim Jalal Abd Al-Latif from an unspecified foreign source, was nevertheless

part of the Iraqi doctrinal publications library and therefore part of Iraqi doctrine. The original source was apparently from the Soviet bloc, as measures used are in the metric system. This manual, too, was a practical guide on how to use weapons of mass destruction on the battlefield. In effect, Iraq reportedly had also pursued the ostensibly easier path of developing radiological weapons ("the dirty bomb") and had perhaps tested a prototype; see Khidir Hamza, "The Iraqi Threat," Testimony, Senate Foreign Relations Committee, 31 July 2002. While this is not a nuclear weapon, this capability could nevertheless be considered as sharing at least some of the same lethal effects as nuclear weapons.

132. The briefing was prepared by LtCol Abd Al-Amir Amin Muhammad, chemical staff officer in the 21st Infantry Division, and is entitled "Al-Istikhdam al-tabawi li-aslihat al-tadmir al-shamil bi-siyaq al-tafil fi zhuruf al-talawwuth al-kutlawi" [The operational use of weapons of mass destruction with the procedures for their employment under conditions of WMD contamination], Restricted, undated, DIA File 547-001-020.

133. Ibid.

134. Ibid.

135. "Al-Amn al-qawmi," 8.

136. "Al-Siyasa al-nawawiya al-sahyuniya."

137. According to Tariq Aziz, who represented Iraq at the Geneva meeting in January 1991 with Secretary of State Baker: "The man said that, you see, clearly to me in clear English." Interview with Tariq Aziz by Ted Koppel, *Nightline*, ABC-TV, 4 December 2002.

138. For example, there was an interview with Fa'iz Fath Abd Al-Rahim, director of the training center of the Directorate of Civil Defense, by Nada Shawkat, which provided rudimentary tips for survival, "Al-Asliha al-nawawiya wa-subul al-wiqaya min israrha" [Nuclear weapons and the means to protect against their after-effects,] *Al-Jumhuriya*, 12 August 1990, 9.

139. The initiative came from at least as high as corps level, and very probably higher.

140. "Al-Tahdid al-amiriki bi-istimal al-asliha al-nawawiya: thalath halat li-junun mutlaq!" [The American threat to use nuclear weapons: Three scenarios for complete insanity], *Alif Ba'*, 23 December 2002, 12. Even well after the war, some Iraqis still believed that a nuclear attack had been a possibility, Ali Al-Jaff, "Hal kanat Amrika tukhattit li-darb Baghdad bi-'l-qunbula al-nawawiya?" [Was America planning to strike Baghdad with an atomic bomb?], *Al-Adwa'* (Baghdad), 10 June 2003, 3.

141. "Khuttat harb layliya sayfiya fi Al-Iraq qad tatahawwal li-nawawiya" [The plan for a night and summer war in Iraq could be transformed into a nuclear one], *Babil Online*, 10 January 2003, online at www.iraq2000.com/online/news4.htm

142. Charles J. Hanley, "Iraqi Officers Describe a War of Courage, Bumbling, Despair," *Los Angeles Times*, 1 June 2003, 1, and Robert Collier, "Behind Baghdad's Fall," *San Francisco Chronicle*, 25 May 2003, A1. Fearing a demoralizing effect, the senior officers did not pass this warning down to their troops.

143. Post and Baram, 172. This was clearly intended to be a lesson learned for others; my wife, at the time a neighbor of the deceased minister, remembers that the police blocked off the street to prevent anyone from going to express their condolences—a very public statement by Saddam's government. As Salah Umar Al-Ali, a member of Iraq's Revolutionary Command Council who defected, told a reporter: "We know that opposition is impossible once Saddam Husayn takes a decision. Any opposition is extremely costly. Saddam has an aura which prevents those around him from drawing his attention to risks or to the possibility that he is not right in what he intends to do." In Sharbal, 86-7.

144. The account of this event, purportedly based on eyewitnesses, was published by Faris Al-Katib, "Fi Karkuk . . . wa fi-ma'dubat ghada' ta'amuriya aaddaha Husayn Kamil wa-'l-mujrim Ali Al-Kimawi saqr Al-Qadisiya Al-Bariq qal lahum: Inn Iraqan yaqudhu atfal sudhdhaj amthalkum masiru mukhzin bi-kull al-maqayis"

[In Kirkuk . . . and in a conspiratorial lunch which Husayn Kamil and the criminal Chemical Ali organized, the Falcon of Al-Qadisiya, Al-Bariq, said to them: An Iraq that is run by naive children like you is destined to have a disgraceful fate by any measure], *Al-Yawm Al-Akhar* (Baghdad), 16 March 2003, 3.

145. Norman Cigar, *Saddam Husayn's Road to War: Risk Assessment, Decisionmaking, and Leadership in an Authoritarian System*, Contributions to War Series, number 5, (Quantico, VA: Marine Corps University Foundation, 2004), 22–4.

146. Unrealistically optimistic reports about the nuclear program included those emanating from his closest aide, Husayn Kamil, as reported by Obeidi, *The Bomb in My Garden*, 96–8.

147. Post and Baram, 169.

148. Arafat, hosting an Arab youth gathering in Bucharest (apparently in 1981), had told an Iraqi who was attending: "By God, I don't know why Saddam hasn't responded to the affront. What's he waiting for?" Recounted in Abd Al-Munim Al-Asamm, "Wa-risala ila sadiq filastini" [Another letter to a Palestinian friend], *Sawt Al-Iraq* (Amsterdam), online at www.sotaliraq.com/articles-iraq/nieuws.php?id=11324

149. Gil Hoffman, "Netanyahu: Saddam Told Me He Would Not Launch Missiles at Us in '98," *Jerusalem Post*, 12 September 2002, 2. At the time, Binyamin Netanyahu was prime minister of Israel.

150. DIA File 134-9-3. Elsewhere, the same order clearly identifies the "supreme commander of the armed forces" in question as "Mr. President (may God protect him)," that is, Saddam. Presumably, the same order also went out to other units. Similarly, during Saddam's trial for the Anfal campaign against the Kurds in the late 1980s, the prosecution presented a voice recording (not further specified as to date, place, or context) in which Saddam had said "I will take responsibility for using chemical weapons, and no one can mount a strike without my approval." Reported in "Al-Hakim yushinn hujuman ala alim saudi wa-yutalib bi-surat

tanfidh ahkam al-idam al-sadira wa-allati satusdar" [Al-Hakim launches an attack on a Saudi alim and demands the expeditious carrying out of the death sentences which have been passed and which are to be passed], *Al-Watan* (Abha, Saudi Arabia), 9 January 2007, online at www.alwatan.com.sa/daily/2007-01-09/politics/politics04.htm

151. As Saddam noted to senior military commanders, "That weapon [i.e. binary chemicals] was already present during the last year of the war, but we did not use it against the Iranians." Al-Sadi, *Al-Sijill al-thaqafi*.

152. See Norman Cigar, "Chemical Weapons and the Gulf War: The Dog That Did Not Bark," *Studies in Conflict and Terrorism*, xv, April-June 1992, 145–55, and W. Andrew Terrill Jr., "Chemical Weapons in the Gulf War," *Strategic Review*, xiv, Spring 1996, 51–8.

153. Interview with Khidir Hamza by Bob Edwards, National Public Radio, *Morning Edition*, 27 February 2001.

154. Interview with Numan Al-Naimi, "'Al-Iraq al-nawawi' asrar wa-khafaya yakshifha li-*Al-Riyadh* al-alim al-iraqi Numan Al-Naimi" ["A Nuclear Iraq" Secrets which the Iraqi scientist Numan Al-Naimi reveals to *Al-Riyadh*], *Al-Riyadh* (Riyadh), 23 January 2006, online at www.alriyadh.com

155. *Al-Zaman*, 5 May 2004; and interview with Husayn Al-Shahristani by Hasan Muawwad, "Nuqtat nizham: liqa' ma Al-Shahristani" [Point of Order: An interview with Al-Shahristani], Al-Arabiya TV, 3 June 2004, online at www.alarabiyya.net

156. "Takhrib al-barnamaj."

157. *The Bomb in My Garden*, 135, and discussion with the author, 25 January 2008.

158. "Takhrib al-barnamaj."

159. LtGen Fawzi Al-Shammari in a discussion with the author, 21 October 2002.

160. The transcript of the session is found in *Harb talid ukhra*, 169.

161. Author's discussion with Mahdi Obeidi, 25 January 2008.

162. Editorial "Pyongyang tuhaddid bi-tahwil shibh al-jazira al-kuriya ila kawmat ramad fi hal taziz al-intishar al-amiriki" [Pyongyang threatens to turn the Korean Peninsula into a pile of ashes if American expansion intensifies], *Babil Online*, 8 February 2003, online at www.iraq2000.com/babil/archive/sat/page6.htm

163. Muhsin Khalil, "Al-Dars al-kuri" [The Korean lesson], *Babil*, 1 January 2003, 1.

164. Ibid.

165. "Al-Siyasa al-nawawiya al-sahyuniya."

166. Interview by Imad Al Jalal with Staff Pilot MajGen Muzahim Sab Hasan, "Qadirun ala tadmir ayy hadaf dakhil 'Isra'il'" [We are capable of destroying any target within Israel], *Hurras al-watan*, 22 April 1990, 17

167. See the declassified CIA Intelligence Assessment, *Iraqi Ballistic Missile Developments*, July 1990, Top Secret, online at www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB80/wmd03.pdf. In fact, Husayn Kamil claimed that one missile in development, presumably Al-Abid, would have had a range of 3,000 km, interview with United Nations officials, 9.

168. Interview with Husayn Al-Shahristani, "Alim dharra," 3.

169. Interview with Husayn Al-Shahristani, "Al-Bahith al-nawawi," 8

170. See A. J. Bacevich, *The Pentomic Era: The U. S. Army between Korea and Vietnam*, (Washington, DC: National Defense University Press, 1986). In those early days, U. S. views about a nuclear battlefield were noticeably sanguine in their optimism and certainty, as reflected in the nuclear exercises conducted and in the opinions expressed by military and civilian leaders, ibid., 112–115.

171. See William R. Van Cleave and S. T. Cohen, *Tactical Nuclear Weapons: An*

Examination of the Issue, (New York: Crane, Russak, 1978), 3–9. For a more updated overview of nuclear weapons in U. S. strategy, see Amy F. Woolf, *U. S. Strategic Nuclear Forces: Background, Developments, and Issues*, (Washington, DC: Congressional Research Service, 14 July 2009).

172. On Vietnam during the Johnson Administration, see Peter Hayes and Nina Tannenwald, "Nixing Nukes in Vietnam," *Bulletin of the Atomic Scientists*, lix, May-June 2003, 52–9, and on Vietnam during the Nixon Administration see William Burr and Jeffrey Kimball, eds., "Nixon White House Considered Nuclear Options against North Vietnam, Declassified Documents Reveal," National Security Archive Electronic Briefing Book No. 195, 31 July 2006, online at www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB195/index.htm

173. See the White House's *National Strategy to Combat Weapons of Mass Destruction*, (Washington, DC: n.p., December 2002), and the Chairman, Joint Chiefs of Staff, *National Military Strategy to Combat Weapons of Mass Destruction*, (Washington, DC: n.p., 13 February 2006). On discussions of potential use against Iran, see Seymour M. Hersh, "Last Stand: The Military's Problem with the President's Iran Policy," *The New Yorker*, 10 July 2006, 42–9.

174. On these elements of Soviet nuclear doctrine, see Scott and Scott, 63–75.

175. See Mary C. FitzGerald, "Marshal Ogarkov and the New Revolution in Soviet Military Affairs," *Defense Analysis*, iii, March 1987, 3–19; Battilega, "Soviet Views," 156-57, and John M. Thompson, "From Strategic Defense to Deterrence: The Evolution of Soviet Nuclear Strategy Since 1962," in Col Carl W. Reddel, USAF, ed., *Transformation in Russian and Soviet Military History*, (Washington, DC: Office of Air Force History, 1990), 293–308. For an account of the period in the context of the declining emphasis on nuclear weapons in both the United States and the Soviet Union, during the tenure of President Ronald Reagan and Premier Mikhail Gorbachev, respectively, see Jonathan Schell, *The Seventh Decade; The New Shape of Nuclear Danger*, (New York: Metropolitan Books, 2007), 184–201.

176. The textbook in question was *Al-Asliha al-kutlawiya: li-tullab al-kulliya al-askariya* [*Weapons of Mass Destruction: For the Students of the Military Academy*], forward by Chemical Branch Maj Adnan Jawad Ali, (no further publishing information provided), 52, DIA File 539-1-3. The original source of the illustration was the Department of the Army Field Manual FM21-41, *Soldier's Manual for Defense against CBR Attack*, (Washington, DC: GPO, April 1953), 134.

177. "Preconceptions cannot be abolished; it is in one sense just another word for 'model' or 'paradigm'—a construct used to simplify reality, which any thinker needs in order to cope with complexity." Richard K. Betts, "Analysis, War, and Decisions: Why Intelligence Failures Are Inevitable," *World Politics*, xxxi, October 1978, 83-4.

178. In his seminal work on decision making frameworks, drawing from psychology, he notes insightfully that "once a person has conceived of a problem in a given way, it is very hard to break out of his pattern of thought. Information, rather than calling the established subgoal into question, will be interpreted within the old framework." Robert Jervis, *Perception and Misperception in International Politics*, (Princeton, NJ: Princeton University Press, 1976), 41

179. Interview with Saddam by Sawyer, *Al-Iraq*, 30 June 1990, 3. Indicative that this had become a routine policy position is the fact that Saddam continued to raise the possibility even after the invasion of Kuwait, as in his interview with Japanese journalists on 20 October 1990, reprinted in the collection *Saddam Husayn sani wahdat Al-Iraq*, 23.

180. Quoted in Sabah Al-Lami, "Innaha bidayat asr jadid fi al-mintaqa al-arabiya" [This is the beginning of a new era in the Arab world], *Hurras al-watan*, 8 April 1990, 9.

181. "Al-Amn al-qawmi," 9.

182. Kamil, "Al-Sahayina yatarifun," *Al-Jumhuriya*, 17 September 1990.

183. "Al-Amn al-qawmi," 9.

184. Interview with Saddam by Sawyer, *Al-Iraq*, 30 June 1990, 3

185. Speech by Saddam, in *Al-Sijill al-thaqafi li-am1990*, DIA File 500-2-37.

186. "Al-Siyasa al-nawawiya al-sahyuniya."

187. "Nass al-mu'tamar al-suhufi alladhi aqadahu Tariq Aziz" [Text of the press conference which Tariq Aziz held], *Al-Iraq*, 10 January 1991, 5.

188. *The Bomb in My Garden*, 135. Numan Al-Naimi confirms this in *Al-Itiraf al-akhir*, 116, as does Khidir Hamza, *Saddam's Bombmaker*, 239-40. Hamza reports that the Iraqi leadership wanted to mount at least one nuclear warhead on a missile at that time, although this still would not have meant a theater-level capability, ibid.

189. For example, Iraq's military press highlighted North Korea's refusal of inspections in 1994, "Kuriya Al-Shamaliya tarfud nida' 'Majlis al-amn' li-taftish mansha'atha al-nawawiya" [North Korea refuses the call by the Security Council to inspect its nuclear facilities], *Al-Qadisiya*, 5 April 1994, 2. Likewise, Pakistan's resistance to U.S. pressure was monitored, "Al-Dughut al-amirikiya hal tamna Pakistan min imtilak al-taqniya al-nawawiya?" [Will American pressure prevent Pakistan from acquiring nuclear technology?], *Al-Thawra*, 3 June 1994, 3.

190. See Post and Baram, 184–6.

191. *Duelfer Report*, i, 26.

192. E-mail to the author, 26 January 2008.

193. Interview with George Piro by Scott Pelley, "Interrogator Shares Saddam's Confessions," *60 Minutes*, CBS News, 27 January 2008.

194. *Duelfer Report*, ii, part 2, 6.

195. See Mahdi Obeidi, "Saddam, The Bomb and Me," *New York Times*, 26 September 2004, online at www.nytimes.com.

196. See, for example, Peter Slavin, John Lancaster, and Kamran Khan, "At Least 7 Nations Tied to Pakistani Nuclear Ring," *Washington Post*, 8 February 2004, A1, A22; and Joby Warrick, "Nuclear Program in Iran Tied to Pakistan," *Washington Post*, 21 December 2003, A1, A36. In fact, according to David Albright and Corey Hinderstein, of the Institute for Science and International Security, A. Q. Khan had already approached Iraq in 1990 with nuclear weapon designs. "Documents Indicate A. Q. Khan Offered Nuclear Weapon Designs to Iraq in 1990: Did He Approach Other Countries?" online at www.isis-online.org/publications/southasia/khan_memo.html.

197. Joby Warrick and Peter Slavin, "Libyan Arms Designs Traced Back to China," *Washington Post*, 15 February 2004, A1.

198. According to a study prepared for Congress, "As regional fears of Iraq have eased and sympathy for the Iraqi people has grown, the United States has had difficulty persuading regional governments to enforce the sanctions regime . . . Improving sanctions enforcement by Iraq's neighbors was dropped from the U.S. targeted-sanctions proposals adopted in Resolution 1409 because of regional resistance." Kenneth Katzman, *Iraq: Compliance, Sanctions, and U.S. Policy*, CRS Issue Brief for Congress, (Washington, DC: Congressional Research Service, 10 December 2002), 11.

199. "France, Russia, and China have generally sought to ease sanctions in order to give Iraq incentives to cooperate with the international community." Ibid., 11. Also see Kenneth Katzman, *Iraq: Oil-for-Food Program, International Sanctions, and Illicit Trade*, Report for Congress, (Washington, DC: Congressional Research Service, 26 September 2002), and Anthony H. Cordesman, *Iraq and the War of Sanctions Conventional Threats and Weapons of Mass Destruction*, (Westport, CT.: Praeger, 1999).

200. See the case for such an approach in Alexander L. George, "The Need for Influence Theory and Actor-Specific Behavioral Models of Adversaries," in Schneider and Post, 271–310. For an informative comparative regional example of

the importance of the context in understanding a specific case of a leader's pursuit—and ultimate abandonment—of nuclear weapons, see Maalfrid Braut-Hegghammer, "Libya's Nuclear Turnaround: Perspectives from Tripoli," *Middle East Journal*, lxii, 1, Winter 2008, 55–72.

201. Alastair Iain Johnston, "Thinking about Strategic Culture," *International Security*, xix, 4, Spring 1995, 34. By the same token, focusing on a country's strategic culture need not replace the threat/interest-based realistic approach, but enrich it and add flexibility to its application in concrete cases. See Michael C. Desch, "Culture Clash: Assessing the Importance of Ideas in Security Studies," *International Security*, xxiii, 1, Summer 1998, 141–70.

202. One of the points which Mark T. Clark highlights is that one cannot assume that emerging nuclear powers have learned from the experience of others or from existing literature in order to avoid mistakes, "Small Nuclear Powers," in *Getting MAD*, 279.

203. Barry R. Schneider, "Deterring International Rivals from War and Escalation," in *Know Thy Enemy*, 4–10.

204. Staff BGen Kanan Khurshid Abd Al-Wahhab, "Khasa'is wa-makhatir al-silah al-nawawi" [The characteristics and risks of nuclear weapons], *Al-Majalla al-askariya*, xxv, 2, April 1988, 101.

205. Perhaps the most forceful such argument was that by Martin van Creveld, *The Transformation of War: The Most Radical Reinterpretation of Armed Conflict Since Clausewitz*, (New York: Free Press, 1991).

206. See, for example, the incisive analysis by S. Paul Kapur, *Dangerous Deterrent: Nuclear Weapons Proliferation and Conflict in South Asia*, (Stanford: Stanford University Press, 2007), 169ff.

207. Ibid., 176.

208. The results of the conference were compiled by Todd S. Sechser, *South Asia and*

the Nuclear Future: Rethinking the Causes and Consequences of Nuclear Proliferation, (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, May 2005), 3.

209. Nina Tannenwald, "The Nuclear Taboo: The United States and the Normative Basis of Nuclear Non-Use," *International Organization*, lviii, 3, Summer 1999, 435.

210. William J. Broad, "Details Emerge of Cold War Nuclear Threat by Cuba," *New York Times*, 22 September 2009, online at www.nytimes.com/2009/09/22/science/22nuke.html?pagewanted=print

211. Abd Al-Wahhab, 101.

212. Abd Al-Wahhab, 92. It is improbable that this general intended to be critical of Saddam, given the regime's well-known harshness in dealing with any perceived dissidents.

213. On the potential impact on further proliferation if Iran goes nuclear, see Patrick Clawson, "Proliferation in the Middle East: Who Is Next after Iran?" in Henry Sokolski, ed., *Taming the Next Set of Strategic Weapons Threats* (Carlisle Barracks, PA: U.S. Army War College Strategic Studies Institute, June 2006), 27–39. In another case, North Korea's development of nuclear weapons opened a debate on a more assertive security policy in Japan, to include a consideration of acquiring its own nuclear capability, something that would have been unheard-of even in the recent past. Doug Struck, "Japan's Pacifism Eroded by Threat," *Washington Post*, 15 February 2003, A22, A30.

214. The resolution of regional disputes as a way to counter nuclear proliferation is a key theme in Joseph Cirincione, *Bomb Scare: The History and Future of Nuclear Weapons*, (New York: Columbia University Press, 2007).

215. Interview with Husayn Al-Shahristani, "Saddam haddad saqafan zamaniyan li-intaj qunbula dharriya al-am 1991" [Saddam set a time limit of 1991 to develop an atom bomb], part 1, *Al-Mu'tamar* (London), 12 February 2001, 8.

216. Interview with Jafar Diya' Jafar by Ali Burdi, "La aslihat damar fi Al-Iraq wa-khassabna al-uraniyum wahdana am 1990" [There are no weapons of [mass] destruction in Iraq, and we enriched uranium by ourselves in 1990], *Al-Nahar* (Beirut), 10 March 2004, online at www.annahar.com Elsewhere, however, Jafar Diya' Jafar estimated that Saddam "was probably a few years away from producing a nuclear bomb," interview with Jafar Diya' Jafar, "Iraq Ended Nuclear Aims in 1991," BBC News, 25 September 2000.

217. See the interview with Husayn Al-Shahristani by Muadd Fayyad, "Alim dharra iraqi: tujad mansha'at nawawiya sirriya fi batin Jabal Himrin bi-'l-Iraq lam yaktashifha al-mufattishun al-dawliyun" [Iraqi nuclear scientist: There are secret nuclear facilities inside Jabal Himrin in Iraq, which the international inspectors did not discover], *Al-Sharq Al-Awsat*, 15 April 2001, 3. However, elsewhere, he estimated that it would have taken until 1992 to have had enough enriched uranium for a bomb, and until late 1992 or early 1993 for a second one, *Al-Mu'tamar*, 12 February 2001, 8.

218. Cited in John Burns, "A Top Iraqi Aide Defies U.S. to Find Proof of Weapons," *New York Times*, 9 December 2002, A1.

219. Discussion by the author with Mahdi Obeidi, 25 January 2008.

220. David Kay, "Denial and Deception Practices of WMD Proliferators: Iraq and Beyond," *The Washington Quarterly*, Winter 1995, 85.

221. Imad Khadduri, *Iraq's Nuclear Mirage; Memoirs and Delusions* (Toronto: Springhead Publishers, 2003), 122, and interview with Numan Al-Naimi, "'Al-Iraq al-nawawi' asrar wa-khafaya yakshifha li-*Al-Riyadh* al-alim al-iraqi Numan Al-Naimi" ["A nuclear Iraq" secrets which the Iraqi scientist Numan Al-Naimi reveals to *Al-Riyadh*], *Al-Riyadh*, 23 January 2006, online at www.alriyadh.com.

222. See the declassified CIA Intelligence Assessment, *Iraqi Ballistic Missile Developments*, July 1990, Top Secret, 14, online at www.gwu.edu/~nsarchiv/NSAEBB/NSAEBB80/wmd03.pdf.

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