
Parameters of Stable Deterrence in a Proliferated Middle East: Lessons from the 1991 Gulf War

GERALD M. STEINBERG

*Professor Gerald Steinberg is the Director of the Program on Conflict Resolution and Negotiation and a member of the BESA Center for Strategic Studies at Bar Ilan University, Ramat Gan, Israel. His recent publications include "Israel and the US: Can the Special Relationship Survive in the New Strategic Environment" in **The US and Its Allies in a Changing World** (Frank Cass, forthcoming); and "The Middle East" in **Entering the New Millennium: Dilemmas in Arms Control** (Sandia National Laboratories, 1999).*

The principles of deterrence have always been important components of military strategy, and for centuries, political and military leaders have repeated the dictum that in order to preserve the peace, a state must be prepared for war ("Qui desiderat pacem praeparet bellum").¹ This axiom is a logical response to the state of nature in an anarchic international system.

During the Cold War, the intellectual discourse on the nature of deterrence reached its maximum development. The intricacies of nuclear deterrence continue to be debated intensely, including its inherent dilemmas, and the difficulties in measuring success (failure has more visible symptoms, but by the time these appear, the damage is done). Since the Cold War, the debate has focused on the central question of whether the deterrence policies followed by the United States, and, to a lesser degree, the Soviet Union, were successful in preventing war, or as critics, such as Sagan, Lebow, and Stein claim, deterrence "was an accident waiting to happen." From the critics' perspective, the world survived and avoided

nuclear destruction *despite* the dangers posed by deterrence, rather than as a result of this strategy.

These questions have accompanied the proliferation of deterrence-based strategies in regional conflicts, particularly in South Asia and the Middle East. Following the 1998 nuclear tests conducted by India and Pakistan, and the ensuing Kargil crisis, the development of deterrence doctrines and capabilities increased. Similarly, in the Middle East, the importance of nuclear deterrence is growing, as treaties, regimes, and export control policies designed to prevent the proliferation of nuclear and other forms of weapons of mass destruction (WMD), as well as ballistic missile technology, have proven ineffective. Iran's progress in acquiring missile technology from Russia and North Korea was highlighted by the tests of the Shehab-3 in July 1998 and again in July 2000, and the Iranian nuclear program continues. In Iraq, the UN Special Commission on Iraq's (UNSCOM's) inspections reached a dead-end in 1998, and the sanctions regime has eroded, allowing Iraq to resume WMD

development and deployment. These developments will, in turn, trigger accelerated efforts to acquire nuclear and missile programs throughout the region. As a result, the era of Israel's tacit nuclear monopoly is ending, and being replaced by a multipolar system based on mutual deterrence.

In assessing the Cold War experience, "the deterrence optimists" have claimed that the proliferation of missiles and chemical, biological, and nuclear weapons can create a stable "balance of terror" in this region.² Adherents to the "pessimist" school, in contrast, point to the difficulties in applying this framework in the context of intense ethno-national and religious disputes in the Middle East.³ Such conflicts emphasize the destabilizing aspects of the "competitive risk-taking" that characterizes the deterrence process. Many also question the ability of Third World leaders to act with the rationality that is essential for stable and successful mutual deterrence.

Notwithstanding these questions and the very problematic nature of this framework, the evidence and a long history indicate that deterrence will become the dominant strategy following the proliferation of nuclear weapons in regional contexts. It is unrealistic to expect that other approaches, such as cooperative arms control regimes or regional security frameworks, can be effective in areas such as the Middle East or South Asia, at least in the short term. Under these circumstances, it is important for policymakers to identify the likely properties and limitations of a regional deterrence system, in order to devise policies that can avert instability and catastrophe for all.

Building on this premise, this article examines the emerging deterrence system in the Middle East by disaggregating deterrence into four basic components. Using this framework, it analyzes the Israeli nuclear deterrence policy, and systematically reassesses the interaction between Iraq and Israel prior to and during the 1991 Gulf War.

As will be demonstrated, despite the particular and perhaps unique context, including Iraqi efforts during the war to trigger Israeli military involvement in order to achieve the political objective of disrupting the US-led coalition, deterrence strategy provided the framework for Israeli decisionmaking. Moreover, there is strong evidence that deterrence was also a key factor in the Iraqi calculus. From the Israeli perspective, the strategy of

deliberate ambiguity, based on a threat spectrum ranging from conventional to nuclear, was seen as successful, but in need of reinforcement.

The evidence from this case also indicates that despite initial fears, decisionmaking on all sides was rational, and catastrophic outcomes were avoided. However, the absence of communication channels and the presence of high levels of misunderstanding and misperception made the deterrence relationship tenuous and uncertain, and in another confrontation or crisis, a successful outcome is far from assured. Uncertainty remains the dominant factor in the context of regional confrontation and deterrence scenarios.

THE PARAMETERS OF DETERRENCE

In the way it has been elaborated by scholars and practitioners, deterrence theory may be as close as social science comes to a natural law or description of behavior, with central and clearly definable elements that do not vary over time or with respect to participants. Based on the vast literature on deterrence theory, four fundamental and universal factors can be used to examine and compare specific cases:

1. The *cost* or damage that would be incurred in the event of war;
2. The *credibility* of the threat to use particular weapons;
3. The nature of the decisionmaking process and the *rationality* of the decisionmakers; and
4. The amount and clarity of *communication* between the actors, and potential for distortion and misunderstandings.

This framework also provides for an analysis of the role of dilemmas and contradictions that are inherent in deterrence theory.

While these factors are no less important to stable strategic deterrence than they were during the Cold War, particular characteristics of regional ethno-national contexts and conflicts sharpen the dilemmas. In regions plagued by chronic instability, internal strife, fanatic commitments to ideology, and mass terror, questions regarding leaders' rationality and their ability to avoid escalatory spirals are often raised.

In addition, when designing regional nuclear deterrence systems, it is difficult to develop reliable command and control systems as well as survivable second-strike capabilities. These problems lead to the possibility of

destabilizing “launch on warning” strategies. This situation, in turn, creates a mutual fear of first strike and exacerbates the security dilemma and the potential for accidental, inadvertent, or catalytic war.

The “Cost” or Pain Inflicted by Nuclear Retaliation

The basic premise of deterrence is that an enemy can be dissuaded from going to war if it can be convinced that the cost would be too great. The cost can take two forms: defeat on the battlefield (deterrence by denial), and the infliction of pain to civilian targets, which would make any battlefield successes irrelevant (deterrence by punishment).⁴

In the case of nuclear weapons, particularly in regional contexts where survivable second-strike capabilities are absent, deterrence by punishment is dominant. The threat of punishment and infliction of pain has reached an unprecedented level in the nuclear era. Despite the use of the label “weapons of mass destruction” in referring to chemical and biological weapons (CBW), and the horror that CBW can inflict, nuclear weapons, and thermo-nuclear weapons in particular, threaten a much higher magnitude of destruction, and can be considered “pure deterrence weapons.”

Thus, the introduction of nuclear deterrence into a regional conflict changes the stakes significantly, creating an equality of destructive power that compensates for major asymmetries. This is certainly true for small states, such as Israel, but it is also true for Pakistan and India. (Indeed, one of the major criticisms of India’s decision to become a declared nuclear weapon state is that it triggered the Pakistani response in kind, thereby strengthening Pakistan’s deterrence against an Indian conventional attack.⁵ Despite its much smaller area, population, and resource level, Pakistan has gained strategic parity with India. The Pakistani moves in Kargil in 1999 can be explained as an early effort to take advantage of this strategic parity.)

In addition, stable mutual deterrence, based on an understanding that the costs of war are too great, assumes that the participants are satisfied actors, or at least prefer the status quo to the costs of warfare. However, Henry Kissinger noted that revisionist states (France under Napoleon, Germany under Hitler, etc.) are difficult to deter,⁶ and see war or the threat of war as a means of altering the situation and improving their collective or individual positions and interests. Many leaders in the

United States viewed the Soviet Union as a revisionist power, and thus argued that the effectiveness of deterrence was limited, at best.⁷

The revisionist and revolutionary goals of some political leaders are incompatible with the establishment of stable deterrence, and the concepts of deterrence, “stability,” and “unacceptable damage” are abstractions with little application in these regions.⁸ Many states in the Middle East are not status-quo powers, and deep ideological hostility to Israel and the West, as well as a weak sense of nationhood, encourages risk-taking. In 1973, Israel failed to deter Egypt because Egyptian President Sadat viewed the status quo, and the continued Israeli occupation of the Sinai, as more costly than the risks of war.⁹ In the face of revisionist objectives, and a willingness to accept significant civilian casualties and economic destruction in order to achieve these objectives, effective deterrence is difficult.

At the same time, the massive destructive power of nuclear weapons and the possibility of assured destruction resulting from a nuclear war increase the costs to such a degree that even revisionist powers can be deterred. Indeed, this is one explanation for the absence of nuclear warfare between the United States and Soviet Union in the 40 years of the Cold War. From this perspective, in the nuclear age, the distinction between status quo and revisionist powers has become ambiguous, at least with respect to deterrence. When the possible cost of reforming the region or the international system is assured destruction, even the most eager revisionists, including Saddam Husayn and Iran’s more radical leaders, appear to be “detractable.”

The Credibility of the Threat

Deterrence that rests on the threat of massive retaliation is not always credible, particularly when both sides are capable of launching a devastating attack, and the credibility of extended deterrence is more problematic than the case of direct deterrence of an existential threat. For example, throughout the Cold War, the United States sought to deter a Soviet attack on Western Europe by threatening to retaliate against Soviet cities (extended nuclear deterrence). The credibility of this threat was always in question, as it raised the possibility of a Soviet nuclear counterattack against American cities. Precisely as a consequence of the high costs involved, in most circumstances, nuclear weapons can be said to be “self-detering.”

Credibility can be increased by changing the nature of the weapons and their deployment, or through declaratory policy designed to convey a higher probability of response. In circumstances where technological or geographic factors create a perceived imbalance in power relationships, leaders often attempt to increase their comparative threat levels in compensation. In the mid-1950s, the United States sought to raise the credibility of its deterrence effort in Europe and other regions by introducing tactical nuclear weapons and a declaratory first-use policy.

Beyond using deployments and military exercises to extend credibility (“the art of commitment,” in Schelling’s terms¹⁰), other techniques include verbal threats (a common feature in regional conflict situations), and lower scale military action to demonstrate credibility. However, since all the parties in a confrontation are likely to follow the same approach, the result is a spiral of escalation, and a phenomenon known as “the commitment trap.”¹¹ Analyses of behavior during the 1962 Cuban missile crisis and other specific cases have shown that assertive and escalatory policies designed to demonstrate commitment and improve credibility also increase the likelihood of a response in kind, which, in turn, triggers further escalation to demonstrate continued credibility.¹² Thus, successful deterrence requires a careful balance between escalation, to increase the costs to the other side, and caution, to avoid an uncontrolled deterrence spiral. The difficulty in balancing these two contradictory factors provides one of the central dilemmas of deterrence theory.

In the Middle East, the difficulties posed by this dilemma were illustrated in 1967, when the leaders of the states engaged in brinkmanship and competitive risk-taking that led to a war that none had sought. These dangers have also been illustrated more recently in the interaction between Israel and the various forces active in Southern Lebanon. In June 1999, after a series of attacks by Hizbollah guerrillas, and before the withdrawal that took place one year later, Israeli decisionmakers escalated by bombing infrastructure targets in Beirut. This response was designed to transfer the costs of Hizbollah attacks to the governments of Lebanon and Syria, thereby deterring them from providing support and protection to the guerrilla forces, as well as to reinforce the credibility of Israeli’s deterrence with respect to other threats in the region. The Israeli retaliatory attacks led to a few months of reduced activity, but Hizbollah at-

tacks gradually resumed, and then, the Israelis acted with restraint in order to avoid a direct confrontation with Syria. However, in December 1999, and again in May 2000, after increasing attacks, the Israeli government ordered further responses against infrastructure targets in Beirut.¹³ This series of events illustrates the tension between escalation to demonstrate and enhance credibility, on the one hand, and caution designed to prevent loss of control and unwanted clashes, on the other. In strategic confrontations, these elements and tensions are emphasized, as will be highlighted in the discussion of the Iraqi-Israeli relationship below.

Another major dilemma related to the credibility of deterrence results from the inherent contradiction between defense and deterrence. During the Cold War, American advocates of pure deterrence by punishment, in the form of mutual assured destruction, argued that if defense, both active and passive, were seen as a realistic option, it would weaken the credibility of threats based on massive retaliation, and encourage decisionmakers to take risks that could lead to a nuclear exchange. During the 1960s and 1970s, when the United States emphasized a strategy of mutual assured destruction to deter a Soviet nuclear strike, resources devoted to civil defense and active missile defense were minimal. (In contrast, the Soviet Union continued to invest heavily in defensive systems and strategies.) Opponents, such as Herman Kahn, attacked this strategy as both strategically and morally shortsighted.¹⁴ They argued that the credibility of a policy limited to massive retaliation was applicable only to the least probable scenarios, and that availability of defensive capabilities increased the credibility of intermediate responses. A similar debate emerged in the 1980s between advocates and opponents of the Strategic Defense Initiative. As will be seen below, the question of the impact of defensive measures, both passive and active, on the credibility of the Israeli policy of deterrence by punishment played an important role in Israeli decisionmaking before and during the 1991 Gulf War, and is emerging in other regional frameworks.

The Nature of the Decisionmaking Process and the Rationality of the Decisionmakers

Successful deterrence and the ability to avoid the inherent dangers of deterrence-based strategies depend on the rationality of the leaders and the nature of the decisionmaking process. In this context, rationality is defined as the ability to weigh options on the basis of

potential costs and benefits, as well as consideration of the likely reaction to each move.¹⁵ In analyses of the history of nuclear deterrence between the United States and Soviet Union, particularly during the Cuban missile crisis, the rationality of the leaders is deemed to have played an important role.¹⁶

Critics of deterrence theory, however, argue that rationality is inherently ambiguous and that history records a number of leaders who were excessively “risk prone” and failed to act “rationally.” Hitler is often cited as an example of a leader who was willing to order the deaths of millions, without any moral limitations, and chose suicide for himself, his regime, and German society.¹⁷

Many questions have been raised regarding the decisionmaking processes of, and the application of rational choice to, Third World leaders. Decisionmaking structures in the Third World tend to be more haphazard than in the West, with less access to information, small or no professional staffs, and greater cultural insularity—which prevents an understanding of the likely responses of adversaries with very different cultural norms.¹⁸ Egyptian President Nasser’s actions in the weeks prior to June 1967, including the expulsion of the UN forces in Sinai and the mobilization of troops along the Israeli border, are often seen as having been taken without assessment of the risks, or preparation to respond to the likely consequences.¹⁹ Scott Sagan argues that in the Third World, the dominant role of the military is problematic because the behaviors of military organizations “display strong proclivities ... that lead to deterrence failures.”²⁰ Based on his analysis of the recent interaction between India and Pakistan, Mario Carranza concludes that, “Once a crisis begins, the line between ‘rational’ and ‘irrational’ behavior gets blurred.”²¹

In addition, deterrence theory assumes that leaders calculate costs and benefits in terms of broad national interests. In contrast, in many states, particularly in the Middle East, the central values of leaders are often restricted to a small sub-group: a particular nationality or tribe, the ruling elite, or immediate family. Calculated risks are taken, but the value system by which they are judged is specific to the individuals and society involved.

However, a number of analysts have argued that the threat of massive destruction forces leaders to adopt a more cautious approach to decisionmaking. Under the threat of mutual assured destruction, the United States and Soviet Union avoided direct military clashes for over 40 years, despite the conflicts over Berlin, the Korean and

Vietnam Wars, and the 1962 Cuban missile crisis. Analysts such as Waltz and Feldman claim that with the acquisition of WMD, Third World leaders, including those in the Middle East, will undergo a process of “socialization” to the realities of mutual deterrence, and will act rationally.²²

Critics of this view argue that it is the result of wishful thinking.²³ A leader like Hitler who would be willing to risk nuclear retaliation in order to achieve his goals would not be affected by deterrence strategies. Similarly, the deep hostilities and hatreds that are characteristic of ethno-national conflicts can overwhelm concepts, such as military utility and cost-benefit analysis, associated with rational decisionmaking.

Given the importance of rationality in deterrence theory, various psychological models and theories have played an important role in this debate. Many analysts argue that the definition of rationality (“high-quality decisionmaking”) is highly ambiguous, as are the models and theories based on rational decisionmaking.²⁴ Others claim that “real decision-makers can achieve only the faintest approximation of the theory’s requirements.”²⁵ As Lebow and Stein note, even nominally rational leaders can act irrationally or miscalculate the costs and implications of a specific policy, particularly in times of great stress. Under conditions of tension, fatigue, and other factors, distortions in rational decisionmaking processes increase.²⁶ Questions regarding the rationality of decisionmaking in the 1991 Gulf War played an important role, as will be illustrated in the case study that follows.

Communication, (Mis)perception, and (Mis)calculation

The fourth central dimension of deterrence focuses on the process of communication. To be successful, a deterring power must communicate its “red lines,” to allow adversaries to recognize the reactions likely to follow any challenge. The success of attempts to balance assertive and cautious policies during a crisis depends on the ability to convey information clearly.

However, misperceptions and misunderstandings are not uncommon in international crises and war.²⁷ In the Third World, and the Middle East in particular, the conditions for misunderstanding and other forms of miscommunication are greatly enhanced, and the ethnic, national, religious, and linguistic divisions often lead to

significant misperceptions. In many Arab and Islamic states, domestic politics are characterized by a high degree of rhetorical exaggeration, and the distinction between internally directed rhetoric and externally directed policy is often confused.²⁸ It is particularly difficult to distinguish between challenges to outside powers, and messages designed to influence domestic political audiences.²⁹ Some analysts claim that in 1967, Nasser did not understand that the rhetoric of war and the mobilization of troops along Israel's borders constituted an intolerable threat, and would force Israel to act preventatively.³⁰ Such misunderstandings and misperceptions in the context of a nuclear crisis would be disastrous.³¹

In addition, inherent tensions complicate the choice between explicit threats and implicit warnings. While direct statements of policy generally provide greater clarity and thus reduce the prospects of misunderstanding, these are often perceived as threats, and contribute to escalation. More subtle and indirect communications may reduce the pressure for a response in kind, but are subject to misperception or may be missed entirely. These factors also played a role in the Iraqi-Israeli deterrence relationship prior to and during the Gulf War.

ISRAELI NUCLEAR DETERRENCE POLICY

Deterrence has been a central part of strategy in the Middle East, and in Israeli policy, for the past 50 years. As a status quo power threatened by states with much larger areas and populations, sustained conventional conflict strained Israeli resources. In the 1948 Arab invasion following the rejection of the UN partition plan, one percent of the Israeli population was killed. This led to Israel's adoption of a strategy based on deterrence by punishment rather than by denial in response to Arab raids and incursions from Gaza and the West Bank.³² As Arab leaders rejected the status quo and spoke of preparations for "the next round," in which their demographic and geographic superiority would be brought to bear, Prime Minister Ben Gurion began the development of the nuclear deterrent option.

The nuclear policy that was developed in the 1950s as the basis for deterring existential attacks, including the policy of deliberate ambiguity, has not changed significantly since then.³³ It is predicated on the perception that this deterrent is necessary to compensate for the small size of the Jewish state, the lack of strategic depth, the structural imbalances in the region, and vulnerability to conventional and non-conventional attack. (Claims that Israel has de-

veloped tactical nuclear weapons and a strategy for employing them in limited conflicts are not supported by the available evidence. Tactical nuclear weapons and operational plans for employing them would require very visible exercises and special acquisitions for ground forces.)

Despite the peace process and changes in some governments' attitudes towards Israel, these existential threats continue, and the emphasis on strategic deterrence has increased. Iraq possesses both the capabilities and the perceived will to attack Israel with WMD and missiles, and Iran is moving to acquire these capabilities. In addition, many radical Arab groups still call for the destruction of the Jewish state. Arab leaders and intellectuals in Egypt and Syria portray acceptance of Israel as a temporary and reluctant recognition of strategic reality, while rejecting the legitimacy of the Jewish State. They continue to refer to Israel as an "infringement of Arab territory and rights," thus suggesting that in the absence of Israeli military capabilities, these "rights" could be reclaimed.³⁴ In this context, Israeli leaders also see the implicit nuclear threat as the basis for Arab acceptance of the need for a negotiated resolution to the conflict.³⁵

This policy is widely supported by Israeli public opinion. Following the 1991 Gulf War, in which Israel was threatened with chemical and biological attacks from Iraqi Scud missiles, polls showed that 88 percent of the population supported the current policy.³⁶ Public opposition to this policy was very limited, with few demonstrations. Indeed, some leaders of the Left, such as Yossi Sarid (Meretz Party) and Efraim Sneh (Labor Party), are strong supporters of this policy. For this group, the deterrent is seen as providing Israel with an alternative form of security, allowing withdrawal from areas captured in 1967 while limiting the risks of another full-scale attack. Thus, nuclear deterrence is firmly grounded in policy and public support, and no better option has been found.

In response to the Egyptian campaign to press Israel to sign the nuclear Non-Proliferation Treaty (NPT) and to give up this deterrent, Israeli leaders note: "The main reason [that Israel will not sign the NPT] is that Israel is the only country in the world threatened by other countries with destruction. ... Their fear, or their suspicion, is our deterrent."³⁷ Ehud Barak, who served as the Israeli Defense Forces (IDF) chief of staff, and became prime minister in 1999, declared, "Israel's nuclear policy, as it is perceived in the eyes of the Arabs, has not changed, will not change and cannot change, because it is a funda-

mental stand on a matter of survival which impacts all the generations to come.”³⁸

These explicit explanations of Israeli policy (and there have been an increasing number of such statements) marked a major departure from the previous policy of silence. They also indicate that, until the conditions are created for an effective WMD-free zone, Israel intends to maintain a nuclear deterrent, despite the risks and difficulties inherent in the development of a reliable deterrent system in the Middle East. These risks and complexities were illustrated during the confrontation with Iraq prior to and during the 1991 Gulf War, and the lessons from this crisis will be central to the development of stable deterrence in the region.

CASE STUDY: DETERRENCE IN THE GULF WAR

The interaction between Israel and Iraq reached its climax in the 1991 Gulf War, and provides a very complex and informative basis for exploring this specific deterrence relationship systematically. Although the role of deterrence in this conflict has been examined repeatedly over the past decade, many of these analyses focused on different issues, such as American deterrence vis-a-vis Iraq, or were based on incomplete, and in some cases, inaccurate information.³⁹

Analysis of this case is complicated by the particular circumstances of the war, and by the Iraqi strategy of attempting to bring Israel into the conflict in order to disrupt the political cohesion of the US-led coalition. It seems that Iraq fired Scud missiles at Israel precisely as a result of the credibility of Israel's deterrent threats. As some Israeli decisionmakers recognized at the time, in this situation, a military retaliation after the Scud missile attacks would have provided Saddam with the response that he sought. However, as demonstrated in the discussion that follows, much of the deterrence interaction, in terms of threats and deployments, took place before the invasion of Kuwait and the subsequent formation of the coalition, when the issues related to coalition coherence, and the Iraqi effort to prod Israel into attacking, were not relevant.

Furthermore, during the war itself, the specific circumstances did not negate the central role of deterrence, and do not invalidate the use of this case. Every war and crisis has unique characteristics, and if deterrence theory were unable to address interactions such as this one, its useful-

ness would be very limited. As will be demonstrated in the following analysis, the reciprocal decisionmaking processes and competitive risk-taking between Israel and Iraq included all of the elements of interactive deterrence models and brinkmanship.

The Uniqueness of the Israel-Iraq Deterrence Relationship

As noted, in responding to the military threat from the Arab states, Israeli leaders have relied heavily on deterrence by punishment, mixed with preemptive and defensive strategies. Israeli policymakers have attempted to demonstrate both possession of the necessary capability and the credibility of the retaliatory threats necessary to make attacks on its territory too costly to contemplate.

There are, however, a number of factors that distinguish the Israel-Iraq relationship. Although Iraqi forces have participated in most of the major Arab-Israeli wars (including 1948, 1967, and 1973), Iraq shares no border with Israel. Iraqi forces joined Jordanian and Syrian forces in past wars, but by itself, Iraq did not pose a direct threat to Israel until the 1980s.

As a result, the history of the Iraqi-Israeli deterrence relationship is very limited. There have been decades of interactions between Israel and Syria, as well as Israel and Egypt, and in these two interactions the nature of the deterrence relationship, red-lines, etc. have been analyzed in great detail.⁴⁰ In these cases, the sources of uncertainties, misunderstandings, and miscalculations that can lead to accidental war and uncontrolled escalation have been somewhat ameliorated. In contrast, the direct deterrence relationship with Iraq was new and there was little experience to guide these confrontations and prevent them from growing out of control.

When the history of interaction is limited, and there is no track record by which to predict or understand behavior, the uncertainty and possibilities for misunderstanding or miscalculation increase. Israel had little direct knowledge of Saddam Husayn by which to assess his behavior and cost/benefit calculations, or to interpret his signals. Similarly, the Iraqi leadership had little direct knowledge of Israeli leaders and their environment. Thus, the strong tendency towards misperception and miscalculation that is already present in deterrence relationships in general, and in all aspects of the Arab-Israeli conflict in particular, was exacerbated in this confrontation.

The Question of Saddam's Rationality

Rationality in decisionmaking and the weighing of risks and benefits are important requirements for successful deterrence. During the interaction between Iraq and Israel, beginning in the late 1980s (following the end of the Iran-Iraq War), there were considerable indications that Saddam was willing to risk everything, even his regime and his life. In his invasion of Iran a decade earlier, and in the production and widespread use of chemical weapons, Saddam had already shown a high proclivity for risk taking, and for challenging the status quo.

Following the Iraqi invasion of Kuwait in August 1990, and the developing confrontation between the United States and Iraq, Saddam seemed to be increasingly "risk prone." During this period, his behavior could not be described as prudent or cautious, as expected in a stable deterrence relationship; instead it was extremely assertive. His public speeches as well as interviews with journalists and discussions with diplomats all reinforced this assessment.⁴¹

This inflammatory rhetoric and matching military activity increased Israeli concerns regarding his intentions and his willingness to take enormous risks. Saddam announced the development of binary chemical agents, and threatened to use them to "make the fire eat up half of Israel" in response to an Israeli attack.⁴² He called on the Iraqi people and his supporters in the Arab world to sacrifice themselves in a "glorious Jihad"⁴³ and referred frequently to the glory of martyrdom.⁴⁴ While linked to the language of deterrence, there was no basis for concluding that the Iraqi leader had suddenly adopted a status quo policy.

Iraq's challenge to Israel and the West resonated throughout the Arab world, and as in the case of Nasser in the 1960s, this enthusiasm encouraged more of the same. On April 17, 1990, Saddam threatened to strike "with all our missiles, bombs, and all our resources."⁴⁵ As a result, Israeli analysts had reason to think that the distinction between boastful rhetoric and the limitations of reality had become blurred, and that Saddam believed his own propaganda. The Iraqi leadership was perceived as having a very deep and, from an Israeli perspective, irrational hatred that displaced calculations based on military utility, leaving the possibility of a chemical or biological attack as a real concern. Press reports cited "a veteran researcher for the Iraqi desk in the IDF's Intelligence

Branch" who warned that "Saddam has a tendency to run risks; he takes surprising steps without considering all the inherent dangers. An example for this is the war against Iran. For that reason, his moves must be watched with care."⁴⁶ Israeli Prime Minister Yitzchak Shamir referred to Saddam as a "madman,"⁴⁷ and Israeli Defense Forces Chief of Staff, General Dan Shomron, warned of the dangers to Israel should "this strange ... Iraqi leader" take "an irrational step" or even "thinks in terms of suicide."⁴⁸ Similarly, the head of the Foreign Affairs and Defense Committee in the Knesset (Parliament) stated "Saddam's repeated stentorian threats of non-conventional military action against Israel are a departure from the norm, even in the Arab world."⁴⁹

Lacking confidence in the reliability of deterrence in the case of Iraq, Israel pursued a strategy of prevention and preemption during the 1980s. In 1981, the Israeli government, led at the time by Prime Minister Menachem Begin, had sent the air force to destroy Iraq's Osiraq nuclear development complex, declaring that if Saddam Husayn acquired nuclear weapons, he "would not have hesitated to drop them on Israeli cities and population centers."⁵⁰ The Begin Doctrine rejected a strategy based on deterrence, and declared that, "Under no circumstances would we allow the enemy to develop weapons of mass destruction against our nation."⁵¹ A "balance of terror" was seen as ineffective and unstable.⁵²

In the period between the late 1980s and the 1991 war, as Israeli decisionmakers sought a response to the renewed Iraqi threat, the costs and difficulties of preemption became increasingly evident. In contrast to 1981, Iraqi WMD facilities and storage areas were dispersed, well defended, and fortified. An effective attack would require a sustained bombing operation hundreds of miles from Israeli territory, carried out through Jordan, Saudi Arabia, and Syria. Such an operation would also be very costly. This left deterrence as the default strategy for Israel.

However, deterrence was also understood to be very problematic. Given the brutality of the Iraqi regime, it was clear that the interest of the Iraqi people was not the major factor in Saddam's calculus. He was willing to risk the bombing of his cities and destruction of the national economy to achieve his objectives. During the 1991 Gulf War, the bombing of cities and military targets, the destruction of major installations, and the risk of large casualties, all did not seem to affect his policies. The death

of large numbers of Kurdish and Shia citizens was also not a major factor in his decisionmaking.

In some scenarios, the primary danger would occur if Baghdad was threatened by American troops, or if Saddam himself was threatened with disgrace, arrest and trial for war crimes, or death. This was the most dangerous period in the scenario, because at this stage, the Iraqi leader might use CBW or any other weapons in his arsenal to preserve his regime. If Israeli leaders thought this likely, and decided that Saddam could not be deterred and that an unacceptable Iraqi attack was highly likely or inevitable, they might well have chosen to execute a large-scale preemptive attack.⁵³ As noted above, a number of Israeli officials expressed the concern that Saddam's actions and threats did not suggest the presence of a careful decisionmaker weighing the costs and benefits of his actions, or their likely consequences.

In contrast, the Iraqi leader's behavior in the last phase of the war and its aftermath provided evidence he was not, in fact, irrational and suicidal.⁵⁴ Although he adopted a high-risk strategy, he was able to take prudent steps in order to save his regime and himself. He did not use CBW, and he did not mistreat prisoners, which could have led to his indictment and trial for war crimes.

Indeed, the major turning point in Saddam's policies took place when the survival of the ruling elite and his regime were threatened.⁵⁵ In mid-February, a US bomb exploded inside a bunker in Baghdad that held families of key personnel in the regime. A few days later (February 15), Saddam provided the first indication that he might be willing to pull out of Kuwait. For the first time, the risks and the costs of war became large enough to cause a change in policy. Two weeks later, the American terms for a cease-fire were accepted unconditionally, thereby enabling Saddam to preserve his regime and begin to restore his lost assets.

Confusion and Inconsistency in Iraqi Policies

As noted above, the absence of a track record in the Israeli-Iraqi deterrence relationship was a major source of confusion and misperception. Saddam Husayn's inconsistent and confusing signals and threats only compounded the problem. Many of his announcements and policy statements were contradictory.

In some cases, Iraqi spokesmen and policymakers sought to use the language of deterrence with respect to Israel. For example, in some declarations, the use of WMD was

linked to retaliation in response to possible Israeli nuclear attacks. Iraqi analysts spoke of "rational calculations," second-strike weapons, and deterrence based on a form of mutual assured destruction. "We have given instructions to the commanders of the air bases and the missile formations that once they hear Israel has hit any place in Iraq with the atomic bomb, they will load the chemical weapon with as much as will reach Israel and direct it at its territory."⁵⁶ On April 2, 1990, after declaring that Iraq had developed chemical weapons, Saddam Husayn also proclaimed, "Everyone must know his limits. Thanks be to God, we know our limits and we will not attack anyone."⁵⁷

A few days later, in a meeting with a delegation of US Senators, Husayn reiterated this emphasis on deterrence. After repeating the threat that "If Israel strikes and uses atomic weapons, then we will use the binary chemicals..." the Iraqi leader sought to provide reassurance that these weapons were designed for deterrence.

I also know the difference between possessing weapons and using them. ... Don't I know the meaning of wars and their atrocities! Are we seeking wars and tragedies? We want peace. ... A just peace is possible when, if Israel possesses one missile, the Arabs possess one missile, so neither can use it.⁵⁸

(In retrospect, the long meeting with this delegation from the United States, and the highly unusual decision to broadcast an Arabic transcript on Baghdad Radio the next day, seem to have been designed as part of Saddam Husayn's efforts to reinforce the credibility of the deterrence posture he declared in his April 2 speech.)

At times, Saddam and other officials also invoked the language of extended deterrence, going beyond Iraqi interests and covering the broader Arab world. For example, in his April 2, 1990 speech in which he revealed the development of a binary chemical weapons capability, Saddam Husayn warned: "If an aggression is committed against an Arab and that Arab seeks our assistance from afar, we will not fail to come to his assistance."⁵⁹ This theme was also repeated in the transcript of the meeting with the US Senators broadcast on Baghdad Radio, and in a speech the next day.⁶⁰

However, these efforts to explain Iraqi actions and policies in terms of deterrence were inconsistent with the clearly revisionist objectives that Saddam continued to pursue. The earlier invasion of Iran, the growing involve-

ment in Jordan, and then, a few months later, the invasion of Kuwait all demonstrated a total rejection of the status quo, while, as noted above, strict deterrence policies are largely associated with status-quo policies and regimes.

Many bellicose official Iraqi statements, particularly with respect to Israel, as well as Iraqi actions were also inconsistent with limited deterrence objectives. In the same speeches that included references to deterrence, Iraqi officials also declared that these weapons would be used to punish Israel and the West. Saddam boasted frequently of helping the Arabs “to liberate themselves... and to liberate certain dark corners in the world from the extortion of the Zionist lobby.”⁶¹ The official Iraqi press repeatedly warned that Israel faced “total annihilation.”⁶² In January 1991, just prior to expiration of the American deadline for withdrawing from Kuwait, during a blustering and agitated speech commemorating the founding of the Iraqi army, Saddam declared that Iraq was prepared for the “glorious jihad,” whose “primary objective ... is the liberation of the dear land of Palestine” and the destruction of “the Zionist entity.”⁶³ ShriII Iraqi newspaper articles and radio broadcasts repeatedly boasted that “Iraq would rip the enemies bodies apart....”⁶⁴

These words were backed by actions that were also inconsistent with a deterrence strategy, and Iraqi military activities seemed to indicate preparations for a first strike. The Iraqi Air Force conducted reconnaissance overflights along the Jordan River, and conducted a series of missile exercises and tests. Iraqi ground forces were also involved in joint exercises with the Jordanian forces, and the new highway between Baghdad and Amman (on which Scud missiles, components, and fuel were transported during the war) was designed to carry hundreds of armored vehicles in a very short time to the Israeli front. Official Iraqi press reports echoed official statements boasting of a “huge and destructive” war arsenal and hidden weapons.⁶⁵ This combination of words and deeds increased Israeli concerns about a potential Iraqi first strike.

Together, this evidence suggests that Saddam Husayn did not formulate a coherent approach to deterrence, and that the use of these terms was an affectation, and not a basis for policy. By invading Iran and, a decade later, Kuwait, Saddam consistently demonstrated goals aimed at altering the status quo, and deterrence was not a major component of these policies.

The Iraqi responses to Israeli policies were also inconsistent. Some Iraqi spokesmen credited Israel with an effective deterrent, stating that Israeli nuclear weapons “killed the spirit of rejection [of Israel’s existence] and revolt, and murdered [Arab] thinking.” This Israeli capability prevented the Arabs “from bold action.”⁶⁶ But other Iraqi military analysts argued that due to its small size, Israel is unable to adopt a second-strike strategy, and claimed that Iraq possessed an advantage that could be exploited in an attack against Israel.

These policy pronouncements reinforce the impression that the concepts of deterrence, and the specific Israeli threats of massive retaliation, were not primary factors in the Iraqi leader’s strategic calculus.⁶⁷ This assessment, in turn, increased the Israeli emphasis on preemption and war-fighting, at least before Saddam’s more cautious behavior became evident towards the end of the Gulf War. Thus, instead of deterrence designed to maintain the status quo, Israeli leaders had a basis for concluding that the Iraqi CBW and nuclear weapons efforts were leading to a military challenge.

Confusion and Inconsistency in Israeli Policies

Towards the end of the 1980s, as the Iraq-Iran War finally ended and threats towards Israel increased, Israeli officials began to focus on responses to the Iraqi WMD threats. As the preemption option embodied in the Begin Doctrine looked increasingly doubtful, emphasis on deterrence by punishment grew. In March 1988, IDF Chief of Staff Dan Shomron noted that, “Of course, in 1973, during the Yom Kippur war, the Arab countries possessed gas.... But they never used it, and there is a reason for this. This type of weapon invites [a] very harsh reaction.”⁶⁸ In an interview with the Israeli daily *Ha’aretz* on June 22, 1988, Defense Minister Rabin threatened that if Iraq used chemical weapons, Israel would retaliate “tenfold.” Rabin also warned:

One of our fears is that the Arab world and its leaders might be deluded to believe that the lack of international reaction to the use of missiles and gases gives them some kind of legitimization to use them. They know they should not be deluded to believe that, because it is a whole different ball game when it comes to us. If they are, God forbid, they should know we will hit them back 100 times harder.⁶⁹

The Israeli government sought to leave the nature of this response deliberately ambiguous, and, in general,

no weapons, either conventional or unconventional, were specified or ruled out. Officials wanted to preserve flexibility and maximum deterrent impact by leaving the nature of the Israeli response to the Iraqi imagination, while at the same time providing an incentive for Iraqi restraint. In formal policy statements, government and army spokesmen declared that in the event of an Iraqi attack, the response would not be automatic, but would depend on the specific circumstances.⁷⁰ However, Science Minister Yuval Neeman warned that if Iraq used chemical weapons, Israel could respond “with the same merchandise.”⁷¹ Such an explicit statement was exceptional (perhaps an unintended slip), but it received a great deal of attention, both in Israel and outside. The overall result of these different and inconsistent statements was one of confusion in Israel, Washington, and probably in Baghdad as well.

After the Iraqi invasion of Kuwait in August 1990, the Israeli emphasis on deterrence declined, as defensive measures were increased. In October 1990, the government decided to distribute gas masks to all Israeli citizens. When the first Iraqi Scuds fell on Tel Aviv, additional defense measures were taken, including the deployment of a number of American Patriot anti-missile batteries, the impact of which was more psychological and political than military-strategic.⁷²

This distribution of gas masks was initiated by Foreign Minister David Levy, whose military and strategic experience was very limited, in response to increasing public concern and demands for protection.⁷³ However, other officials were less than enthusiastic about this decision, and recognized the inherent tension and even contradiction between deterrence and defense. If Israel demonstrated that absorption of a first strike was no longer “an unthinkable option,” the credibility of its preemptive and retaliatory threats would be weakened. Indeed, for this reason, Defense Minister Arens and Chief of Staff Shomron opposed the distribution of gas masks (which, in any case, were of questionable effectiveness, and caused panic).⁷⁴ In other words, when Israel decided to devote greater resources to defense, this served as a signal that under some conditions, the decisionmakers might be willing to absorb a chemical first-strike. In preparing to absorb a chemical attack, Israel was also signaling a lower probability of preemption or massive retaliation.⁷⁵

Throughout this period, the tension between defense and deterrence through massive retaliation continued.

Military and Ministry of Defense officials never became reconciled to the decision to take passive defense measures, and they continued to emphasize deterrence through massive retaliation as the only available alternative. The overall result was one of confusion and inconsistency in Israeli policy.

Communication of Intentions: The Language of Threats

As noted above, the nature of communication is an important element of the deterrence process. Language and its context, as well as symbolic actions and implicit messages, can be sources of misunderstanding and misperception, thereby increasing the probability of deterrence failure. This is indeed the case with respect to the relationship between Israel and Iraq during this period.

The specific language of Saddam’s April 2, 1990 speech, in which he declared that “we will make the fire consume half of Israel,” had a major impact. Given the history of Arab efforts to destroy the Jewish state, and the background of the Nazi Holocaust, the threat of chemical and gas attack is viewed with particular alarm in Israel. This, in turn, greatly increased the prospects of an Israeli decision to launch a preventive attack.

As tension in the region increased following the invasion of Kuwait, the language of Iraqi threats became more bellicose. General Amid Shaaban declared that in the event of an American attack, Iraq would respond with “direct crushing blows to the dens of the Israelis.”⁷⁶ At the beginning of the war, following the first missile attacks on Israel, official Iraqi announcements declared that Tel Aviv had been turned into “a crematorium.”⁷⁷

After the war (“the mother of all battles”) began, and it was clear that the Iraqi military was unable to defend against the allied air attacks and that Israel would not be drawn into a response to the conventionally armed Scud attacks, the Iraqi Armed Forces warned of “hidden surprises,” and of “lightning and painful strikes which will burn their forces...so that the enemies will suffer the consequences of their acts...and pay a high price...”⁷⁸ Many observers, particularly in Israel, understood this to indicate preparations for use of CBW or even nuclear weapons.

The impact of the language of these threats was reinforced by Iraq’s military actions and preparations. Iraq had already used chemical weapons and missiles against

Iran, and had deployed and tested an extensive network for launching and hiding ballistic missiles in the west, near the Jordanian border. In early 1990, parts for a “supergun” to launch non-conventional warheads were discovered in Britain, Turkey, and Greece, on their way to Iraq.⁷⁹ By following through on many of his past threats, including the warning, made many weeks before the war began, that if the United States attacked Iraq, missiles would be used against Israeli cities, Saddam had established a reputation of high credibility for his threats.⁸⁰ The Iraqi leader was perceived to be in a desperate situation, and this perception reinforced the credibility of these threats. The very credibility of the Iraqi military threat increased Israeli concerns. This added to the instability in the relationship, and led to further Israeli discussions of a possible preventive strike. Thus, while a stable deterrence relationship requires the maintenance of a delicate balance between caution and assertive behavior, in this case, there was no evidence of caution, only assertive policies.

Saddam Husayn’s threats and the deployment and testing of missiles and other weapons in western Iraq forced Israeli leaders to develop a response. In general, there are two broad approaches for such situations: raising the stakes by meeting the threat with a counter-threat, or seeking to lower the tension by de-escalating. The first option risks the possibility of an uncontrolled “conflict spiral,” but the second option could be perceived as weakness and appeasement. Both paths provide responses to the dangers of the “commitment trap,” but, as noted above in the discussion of deterrence dilemmas, either could also lead to war.

As expected on the basis of deterrence theory, Israeli policymakers sought to combine elements of both approaches. As noted above, throughout 1990, including the final weeks before the coalition military attack, political and military leaders made an effort to strengthen the credibility of deterrence.

Thereafter, the Israeli response of restraint and the adoption of a “low profile” throughout the war can be characterized as de-escalatory. No blatant military moves were taken, no large-scale maneuvers were held, and no missile tests were announced. Gas masks were distributed and the population was prepared to deal with the possibility of a CW attack. The adoption of passive defensive measures reinforced the de-escalatory tendency of Israeli actions and policies.

During the war, as missiles struck Tel Aviv and Ramat Gan, the Israeli dilemma increased. On the one hand, the leaders were faced with pressures to respond, in a manner consistent with the Israeli policy of deterrence. As many policymakers and analysts have noted, this marked “the first time an Arab country had succeeded in striking Israeli population centers since 1948, and the first time Israel had permitted an Arab attack to go unpunished.”⁸¹

At the same time, the Israelis also understood that the purpose of the missile attacks was precisely to bring Israel into the war, in the hope of destroying the American-led coalition.⁸² Strategically, IDF Chief of Staff Shomron and other top officers argued that in the context of the war, it made more sense for Israel to communicate and act with restraint, and allow the United States to destroy the Iraqi threat. In addition, given the scale of the coalition bombing, Israeli decisionmakers realized that a limited response against military targets would not add significantly to the damage, and if Israeli aircraft overflew Jordan, this would add to the instability and tension in the Hashemite Kingdom.⁸³ Under these circumstances, Israeli military options were very limited. (In addition, the US government’s firm opposition to Israeli military action, and a desire to avoid complicating the already strained relations with the Bush administration, were also factors in the Israeli calculus.)⁸⁴ This situation was also reflected in the low-key nature of Israel’s public statements.

The threat of chemical or biological attack, however, continued, and Israeli threats to respond became more pointed, as noted above. In the period immediately prior to the beginning of the ground war, the possibility of an Iraqi chemical attack against Israel was deemed to be relatively high. At this stage, Prime Minister Shamir made one of his only public statements during the war, declaring that Israel was ready, if necessary, to intervene, and “we are ready for any eventuality.”⁸⁵ On television, Israeli military officials were shown against a background of combat aircraft on alert. In the context of deterrence theory, this was an important implicit threat.

Throughout this period, the role of the Israeli nuclear deterrent remained “in the basement.” Israel has been credited with a nuclear capability for many years, but there have been no public acknowledgments or tests. Israeli decisionmakers have assumed that this situation is sufficient to deter “existential attacks” that threaten the survival of the state.⁸⁶

The confrontation with Iraq raised some questions regarding the viability of this strategy. The threats to “make the fire consume half of Israel,” to “direct crushing blows to the dens of the Israelis,” and to turn Tel Aviv into “a crematorium” seemed to indicate that perhaps the nuclear capability was, in fact, too ambiguous to deter an Iraqi attack (or, as discussed earlier, that Saddam was not deterrable).

Nevertheless, the Israeli government did not make any explicit threat to use nuclear weapons—but these were also not explicitly ruled out. However, in this area, as well, the overall Israeli policy was confusing. Just prior to the war, IDF Chief of Staff Shomron made a statement that Israel is capable of dealing a painful blow, but it has always stated that it would not be the first to take to nuclear arms, and this was repeated by the Israeli ambassadors in Washington and Brussels.⁸⁷ This seemed to indicate a softening of the Israeli position, which had left the option of “first use” demonstrably open. Later, however, government officials issued a correction, restating the entirely ambiguous policy that Israel would not be the first to *introduce* nuclear weapons.

The possibility of a nuclear response to a large-scale chemical attack was discussed widely in the international press and in non-official Israeli sources.⁸⁸ In a television interview on February 2, 1991, US Secretary of Defense Cheney was asked whether he thought Israel would respond to chemical attacks with non-conventional weapons, and, while not providing a specific answer, he warned Saddam to be cautious.⁸⁹ Although there is no evidence that this statement was coordinated with Israel, it served to reinforce the ambiguous retaliatory threat. Indeed, within Israel, some officials and analysts clearly viewed this statement as “a warning of behalf of Israel,” and sought to reinforce its impact.⁹⁰ In addition, this threat may have been reinforced when Israel reportedly tested a Jericho missile in early January, a few days before the beginning of the war.⁹¹

Miscalculation

Historically, the failure of deterrence has often been the result of a combination of a willingness to take risks, coupled with miscalculation regarding the capabilities and intentions of opponents.⁹² Throughout the period before and during the war, Saddam Husayn appeared to miscalculate the capabilities of his own forces, as well as the extent of the response. The Iraqi leader miscalculated

Iran’s ability to repulse the Iraqi invasion, miscalculated the nature of the American response to the invasion of Kuwait, and miscalculated the ability of the Iraqi military to inflict damage on the American and allied forces.

With respect to Israel, and perhaps in dealing with the United States, Saddam seemed to place a high value on the impact of his CBW capability. In his April 2, 1990 speech, and again on a number of later occasions, the Iraqi leader threatened to use CW in retaliation for an Israeli attack, apparently attempting to deter attacks on Iraqi missile sites or CBW and nuclear weapons facilities.⁹³ The official Iraqi press followed by declaring that CW could deter Israeli attacks and that Iraq had reached the stage of strategic parity with Israel.⁹⁴

Most of the Iraqi CW capability was based on delivery by long-range bombers, or the use of artillery shells.⁹⁵ For the former to damage Israel, the Iraqi Air Force would have had to penetrate Israel’s formidable air defense system. To fire artillery shells into Israel, Iraqi ground forces would have had to be deployed within Jordan. Neither provided a credible threat, particularly after most of the Iraqi heavy bombers escaped to Iran in the first days of the war, and Iraqi ground forces were deployed far away from the western border.

Saddam did have increased-range, reduced-payload Scud-B missiles (the Al-Abbas and Al-Husayn) that could potentially deliver an unknown and untested chemical or biological warhead, and perhaps nuclear capabilities. The damage that could have been caused by CW delivered by these missiles was inherently low, although the BW threat was potentially greater. The biological and binary chemical weapons that formed the basis for the Iraqi strategic capability were neither stable nor advanced. The UNSCOM inspectors revealed that warheads “were relatively crude designs which did not store chemical and biological weapons well and which did a poor job of dispersing them.”⁹⁶ As a result, Iraq was still far from achieving strategic parity with Israel.

During this period, it was also possible to conclude that the Iraqi leadership did not comprehend the destructive power of the Israeli nuclear retaliatory threat. The construction of “radiation-proof” bomb shelters for the elite (which were penetrated by US conventional weapons) and many government statements seemed to show that the regime (if not the rest of Iraq) thought it could survive a nuclear war with Israel. Evacuation exercises were conducted from some Baghdad neighborhoods, and prepara-

tions against atomic attack were discussed.⁹⁷ In a publication entitled “Advice to Citizens in Case of Nuclear Attack,” Iraqis were told to prepare a supply of food, water, reading material (such as books on Arab history, Arab poetry, stories, international novels, and the Koran), and leisure activities such as crosswords and joke books.⁹⁸ While it is possible that the Iraqis publicly denigrated the danger of nuclear weapons in order to lower the impact of the Israeli deterrence threat, this miscalculation is consistent with the other examples cited above.

Once the war began, Saddam acted more cautiously with respect to Israel, and did not “miscalculate” with respect to either the use of conventional missiles or CBW. The use of missiles armed with conventional warheads was designed specifically to bring an Israeli response, in the hope of forcing the Arab states to end cooperation with the United States and the other coalition members. Here, Husayn miscalculated (Israel resisted the pressure to respond militarily), but in a way that showed that the Israeli retaliatory threat was highly credible.

The Ambiguous Deterrent Provided by Chemical and Biological Weapons

The Israeli-Iraqi relationship during the Gulf War was also characterized by an asymmetric situation in which Iraq’s primary deterrent was based on chemical and perhaps biological weapons, while Israel’s deterrent included a massive conventional superiority, an ambiguous CBW capability, and a nuclear option. In this context, many analysts attribute Iraq’s decision not to use its chemical or biological weapons to Israel’s nuclear option. From this perspective, this was the major factor blocking Saddam’s aims of bringing Israel into the war and leading the Arab world in a decisive war against Israel and “the Zionist enemy.”⁹⁹

However, many aspects of this analysis leave basic questions unanswered, in particular the question of whether the Israeli nuclear deterrent was really decisive.

In a general sense, the role and credibility of nuclear deterrence vis-a-vis CBW capabilities have been subjected to an intense debate among analysts and policymakers. “Deterrence hawks” cite the 1991 Gulf War, and Iraq’s abstention from the use of CBW against American troops and against Israel, as evidence for the success of “calculated nuclear ambiguity.” Robert Joseph, for example, argues: “The ability to retaliate and punish

with overwhelming force will remain an important ingredient in our deterrence posture—as evidenced by Iraq’s concern that the United States and Israel would respond to CBW use with nuclear weapons.”¹⁰⁰ In this context, Joseph and many others cite US Secretary of State Baker’s letter to Saddam Husayn (handed just before the war began to Tariq Aziz in Geneva, who left it on the table after reading the contents), and Secretary of Defense Cheney’s “warning” to Iraq of a possible Israeli non-conventional response to any Iraqi use of CBW.

However, Scott Sagan, as well as other analysts, have questioned this policy. “Is the threat of US nuclear retaliation credible and effective against states that possess chemical weapons (CW) and biological weapons (BW)?”¹⁰¹ While CW are classified as WMD, the scale of nuclear destruction is far greater (this is probably also the case relative to BW, although there is insufficient empirical evidence in this area). CW does not pose an existential threat, and there are also defenses, as distinct from nuclear weapons. Given the difference in the level of destruction, the credibility of a nuclear response to a limited CW attack is quite questionable. (In the Israeli debate about possible ratification of the Chemical Weapons Convention, proponents argue that the threat of nuclear retaliation is sufficient to deter strategic uses of CW, while opponents of ratification claim that asymmetric nuclear deterrence is not credible in this situation, and requires the maintenance of a chemical deterrent option.)

Beyond the question of effectiveness, Sagan also argues that calculated ambiguity, designed to avoid “the commitment trap,” is ineffective, particularly when this policy is developed during a crisis, and is not part of an ongoing and carefully developed strategy. Opponents of American calculated nuclear ambiguity to deter chemical and biological threats also argue that the example set by the United States in this area influences other states, thereby spurring proliferation.

Upon close examination, however, most of this debate between deterrence “hawks” and “doves” is not relevant to the Middle East or to the Iraqi-Israeli deterrence relationship, and reflects a somewhat American-centric view. The Israeli policy of deliberate nuclear ambiguity was established long before the crisis with Iraq began, and, despite the similarity in terminology, is fundamentally different in substance when compared to the spe-

cific American policies with respect to deterring Iraq in the Gulf War.

For over 30 years, Israeli leaders have viewed existential deterrence as a key pillar of national security. By restricting this deterrence threat to existential situations, but leaving the definition of such situations relatively flexible, Israeli policymakers have been able to maintain the credibility of the threat, and avoid the commitment trap. Despite the confusion noted above, on this specific point, the careful Israeli statements during the confrontation with Iraq were consistent, and avoided the difficulties predicted in Sagan's model.

The history and evolution of Israeli nuclear ambiguity over the past four decades, and the factors involved in decisionmaking, also demonstrate that Israeli policies are independent of the policies adopted by the United States.¹⁰² Given this history, the concerns raised by Sagan, Panofsky,¹⁰³ and other "proliferation doves" do not address the Israeli situation. Even if the United States were to change its deterrence policies fundamentally, and renounce the use of nuclear weapons in response to a CBW attack, the evidence indicates that this would not influence Israeli perceptions or policies.

Nevertheless, questions about the role of Israeli nuclear deterrence in the case of the 1991 Gulf War remain. Israel might have responded to a limited chemical attack with a massive conventional attack, using tactics and weapons that the United States had withheld,¹⁰⁴ or perhaps, as indicated by Yuval Neeman, with a "response in kind," or perhaps with nuclear weapons. The Israeli response remained and remains ambiguous, reinforcing the perception that ambiguity and a range of options are central to successful deterrence policies. In this case, as during the Cold War, the role of nuclear deterrence cannot be discounted, but it is not possible to isolate this factor from the others in assessing the basis for the outcome.

IMPLICATIONS

The 1991 Gulf War was, for all intents and purposes, the first Middle East conflict in the age of proliferation. Although the circumstances were unusual, and the Israeli-Iraqi interaction was not the only or even the central focus, these events still resonate throughout the region.

The deterrence framework provides a coherent foundation for analyzing both Israeli and Iraqi strategy, and the lessons from this experience are important. From the Israeli perspective, the role of deterrence was mixed. On

the one hand, the Israeli strategy did not prevent the conventionally armed Scud missile attacks, marking the first time since 1948 that Israeli cities had been subject to attack. To a major degree, this can be attributed to the circumstances of this conflict, particularly the American-led military coalition against Iraq. These circumstances explain both the Iraqi decision to attack Israel using missiles armed with conventional warheads, and the Israeli decision not to respond. For Israel, this was a failure of deterrence, in a narrow sense, but not one that exacted an intolerable price or endangered national survival. While some critics argue that this case was one of a series of deterrence failures that, when combined with others in Lebanon and the *intifada*, undermined the credibility of general deterrence,¹⁰⁵ the evidence to support this is far from clear.

Indeed, the fact that Iraq did not use the chemical or biological weapons in its inventory provides a strong basis for concluding that Israeli deterrence policies and threats of massive retaliation succeeded.¹⁰⁶ As in other cases, the role of deterrence is difficult to ascertain with any certainty, particularly without access to reliable information on Iraqi perceptions or decisionmaking processes. While the specific form of retaliation was unclear, the spectrum—ranging from a (high-probability) massive conventional attack free of the restraints adopted by the coalition forces, to a (lower probability) chemical or even nuclear response—was sufficiently credible.¹⁰⁷ The Israeli deterrence strategy of deliberate ambiguity, including but not limited to nuclear retaliation, was seen to be successful, and as a result, was reinforced.

At the same time, the events before and during this war highlight the inherent sources of instability in the mutual deterrence relationship between Israel and Iraq. Despite the "successful" outcome, the particular circumstances of this case do not provide clear evidence for the claim that "the proliferation of chemically-armed ballistic missiles may not be as destabilizing and dangerous as many observers expect."¹⁰⁸

From an Israeli perspective, Saddam's policies were marked by inconsistency and repeated miscalculation, and, like Nasser, the Iraqi leader seemed to be swept away by his own rhetoric. The enthusiasm with which his exaggerations regarding Iraqi technological and military capabilities were greeted in the Arab world made it difficult for him to retreat, and once "out on a limb" the

risks of war might have been seen as preferable to backing down. However, the record also shows that although Saddam Husayn was willing to take very high risks, he was not irrational or suicidal, and was capable of stopping just short of complete catastrophe.

Thus, this case highlights the strengths, as well as difficulties and dilemmas of deterrence in regional conflicts. The dangers posed by the escalation spiral and competitive risk-taking used to enhance credibility are magnified by the absence of any formal communication links, different value systems, and the resulting misperception and worst-case analysis. In this bilateral situation, which is not unique to the Israel-Iraq case, a strategy based on deterrence is exceedingly risky.

Nevertheless, given the existing environment, there are no realistic alternatives to deterrence in areas of regional conflict, and some of the alternatives, including the adoption of a preventive or preemptive strategy, are more uncertain and even more destabilizing. Under these conditions, policymakers would be best served by working to reduce the impact of the inherent limitations of deterrence. As demonstrated in this case study, this means developing channels of communication to prevent misperceptions and misunderstandings, increasing the transparency of decisionmaking, and developing responses that avoid the consequences of the escalation spiral and the commitment trap.

¹ For a summary of pre-nuclear deterrence, see George Quester, *Deterrence Before Hiroshima: The Airpower Background of Modern Strategy* (New York: Wiley, 1966). For seminal developments of nuclear deterrence theories, see Bernard Brodie, *The Absolute Weapon* (New York: Harcourt, Brace, 1946); Bernard Brodie, *Strategy in the Missile Age* (Princeton: Princeton University Press, 1959); Thomas Schelling, *The Strategy of Conflict* (New Haven: Yale University Press, 1960).

² See Shai Feldman, *Israeli Nuclear Deterrence* (New York: Columbia University Press, 1982), p. 45; Thomas McNaughton, "Ballistic Missiles and Chemical Weapons: The Legacy of the Iran-Iraq War," *International Security* 15 (Fall 1990), p. 7; Kenneth Waltz, "The Spread of Nuclear Weapons: More May be Better," *Adelphi Paper* No. 171 (London: IISS, 1981).

³ Yair Evron, *Israeli's Nuclear Dilemma* (London: Routledge, 1994); Scott Sagan, "Sagan Responds to Waltz," in Kenneth N. Waltz and Sagan, *The Spread of Nuclear Weapons: a Debate* (New York: Norton, 1995); Lewis Dunn, *Controlling the Bomb: Nuclear Proliferation in the 1980s* (New Haven: Yale University Press, 1982).

⁴ Glenn Snyder, *Deterrence and Defense* (Princeton: Princeton University Press, 1961); John Mearsheimer, *Conventional Deterrence* (Ithaca, NY: Cornell University Press, 1983).

⁵ Mario E. Carranza, "An Impossible Game: Stable Nuclear Deterrence After the Indian and Pakistani Tests," *The Nonproliferation Review* 6 (Spring-Summer 1999), p. 11.

⁶ Henry Kissinger, *A World Restored: Metternich, Castlereigh, and Problems of Peace 1812-1822* (Boston: Houghton Mifflin Co., 1957).

⁷ See, for example, Zbigniew Brzezinski, *Power and Principle: Memoirs of the National Security Adviser, 1977-1981* (New York: Farrar, Straus, Giroux, 1983).

⁸ Alan Platt, ed., "Report of the Study Group on Multilateral Arms Transfer Guidelines for the Middle East," Stimson Center Report, Washington, DC, May 1992, p.16; Steven David, "Why the Third World Still Matters," *International Security* 17 (Winter 1992/3), pp. 127-159.

⁹ Jonathan Shimshoni, *Israel and Conventional Deterrence* (Ithaca, NY: Cornell University Press, 1988); see also Richard Ned Lebow and Janice Gross Stein, "Rational Deterrence Theory: I Think, Therefore I Deter," *World Politics* 41 (January 1989), p. 211.

¹⁰ Thomas C. Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966), p. 35.

¹¹ Scott D. Sagan, "The Commitment Trap," *International Security* 24 (Spring 2000), p. 99. While some of the elements in Sagan's model of credibility are general and similar to other analyses, the inclusion of factors such as international legitimacy are explicitly applicable to situations involving the United States, and are less applicable to other international actors.

¹² *Ibid.*

¹³ David Rudge, Arieh O'Sullivan, and Danna Harman, "Beirut Raises Pull-out Stakes," *Jerusalem Post*, May 7, 2000; Gerald M. Steinberg, "Can Deterrence Work in Lebanon?" *Jerusalem Post*, February 10, 2000, <www.jpost.com>.

¹⁴ Hermann Kahn, *Thinking About the Unthinkable* (New York: Horizon Books, 1962).

¹⁵ Christopher H. Achen and Duncan Snidal, "Rational Deterrence Theory and Comparative Case Studies," *World Politics* 41 (January 1989), pp. 143-169. For a discussion of theories of rational calculation and expected utilities, see Bruce Bueno De Mesquita and David Lalman, "Reason and War," *American Political Science Review* 80 (December 1986), pp.1113-30; Graham Allison, Albert Carnesale, and Joseph Nye Jr., eds., *Hawks, Doves, and Owls* (New York: W.W. Norton, 1985).

¹⁶ The literature on this topic is vast and growing continuously. See, for example, Alexander L. George and Richard Smoke, *Deterrence in American Foreign Policy* (New York: Columbia University Press, 1974); Robert Jervis, *The Illogic of American Nuclear Strategy* (Ithaca, NY: Cornell University Press, 1984). James G. Blight, "The Cuban Missile Crisis and the New Nuclear States," *Security Studies* 4 (Summer 1995), pp. 811-850.

¹⁷ See Lebow and Stein, "Rational Deterrence Theory: I Think, Therefore I Deter," p. 210.

¹⁸ See, for example, Michael Mandelbaum, "International Stability and Nuclear Order," in David Gompert, ed., *Nuclear Weapons and World Politics: Alternatives for the Future* (New York: McGraw Hill, 1977), p. 66; and Robert Jervis, "Rational Deterrence: Theory and Evidence," *World Politics* 41 (January 1989), p. 200.

¹⁹ Richard B. Parker, "The June 1967 War: Some Mysteries Explored," *Middle East Journal* 46 (Spring 1967), pp. 177-197; Janice Gross Stein, "Calculation, Miscalculation, and Conventional Deterrence I: The View from Cairo," in Robert Jervis, Richard Ned Lebow, and Janice Gross Stein, eds., *Psychology and Deterrence* (Baltimore: Johns Hopkins University Press, 1985).

²⁰ Scott D. Sagan, "The Perils of Proliferation," *International Security* 24 (Spring 1994).

²¹ Carranza, "An Impossible Game: Stable Nuclear Deterrence After the Indian and Pakistani Tests," p. 18.

²² Feldman, *Israeli Nuclear Deterrence*, p. 148; Waltz, "The Spread of Nuclear Weapons: More May be Better," see also Stephen Van Evera, "Primed for Peace," *International Security* 15 (Winter 1990/1).

²³ Achen and Snidal, "Rational Deterrence Theory and Comparative Case Studies."

²⁴ David A. Welch, "Crisis Decision-Making Reconsidered," *Journal of Conflict Resolution* 33 (September 1989), pp. 430-455; Irving L. Janis and L. Mann, *Decisionmaking: A Psychological Analysis of Conflict, Choice and*

Commitment (New York: Free Press, 1977); Robert Powell, *Nuclear Deterrence Theory: The Search for Credibility* (Cambridge, UK: Cambridge University Press, 1990); Barry Nalebuff "Rational Deterrence in an Imperfect World," *World Politics* 43 (April 1991), pp. 313-335.

²⁵ John Steinbruner, "Beyond Rational Deterrence: The Struggle for New Conceptions," in Klaus Knorr, ed., *Power, Strategy and Security* (Princeton: Princeton University Press, 1987).

²⁶ Lebow and Stein, "Rational Deterrence Theory: I Think, Therefore I Deter."

²⁷ Jervis, "Rational Deterrence: Theory and Evidence," p. 203. In the context of the Cold War, Sagan emphasizes the failures and mistakes that occurred during crises, and could have resulted in accidental nuclear exchanges. See Scott D. Sagan, *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton, NJ: Princeton University Press, 1993).

²⁸ Steven David, "Why the Third World Still Matters," *International Security* 17 (Winter 1992/3), pp. 127-159.

²⁹ Lebow and Stein, "Rational Deterrence Theory," pp. 215-6; Jervis, Lebow, and Stein, *Psychology and Deterrence*; John Steinbruner, *The Cybernetic Theory of Decision* (Princeton, NJ: Princeton University Press, 1974).

³⁰ Parker, "The June 1967 War: Some Mysteries Explored," pp. 177-197.

³¹ Even rational leaders can also miscalculate, and estimate that the reaction of the other side will be limited, when, in fact, it is not. Alan Alexandroff and Richard Rosecrance, "Deterrence in 1939," *World Politics* 29 (April 1977), pp. 404-424, present evidence that after many years of inaction from Britain and France, Hitler was surprised when the British declared war in 1939, in response to the Nazi invasion of Poland. British inaction in the case of the Sudetanland and Czechoslovakia had reduced the credibility of threats to intervene. More recently, the American "Vietnam complex" and avoidance of war seem to have convinced Saddam Husayn that the United States would not send troops and attack Iraq after the invasion of Kuwait. This was a clear miscalculation.

³² Shimshoni, *Israel and Conventional Deterrence*.

³³ This ambiguity was designed, in large part, to limit friction with the United States. See Avner Cohen, *Israel and the Bomb* (New York: Columbia University Press, 1998). For a discussion of the development of Israeli deterrence doctrine, see Evron, *Israel's Nuclear Dilemma*.

³⁴ Abdulhay Sayed, "The Future of the Israeli Nuclear Force and the Middle East Peace Process," *Security Dialogue* 28 (March 1997), pp. 31-48.

³⁵ Shimon Peres (with Aryeh Naor), *The New Middle East* (Tel Aviv: Steimatzky, 1993), pp. 12-14 (Hebrew; English version published: (New York: Henry Holt, 1993).

³⁶ Asher Arian, "Israel and the Peace Process: Security and Political Attitudes in 1993," Jaffee Center for Strategic Studies Memorandum No. 39, Tel Aviv University, February 1993, p.12. However, in contrast to India and Pakistan, there is no public support in Israel for nuclear testing or an overt nuclear posture.

³⁷ "Egypt Turns Up The Heat On Israeli Accession To The NPT," *Nuclear Proliferation News*, No. 18, February 17, 1995, citing Reuters News Reports, February 1-2, 1995.

³⁸ Aluf Benn, "Barak: Nuclear Policy has not and will not change," *Ha'aretz* December 31, 1995, p.10a. For a broader analysis of Israeli policy vis-a-vis the NPT, see Gerald M. Steinberg, "The 1995 NPT Extension and Review Conference and the Arab-Israeli Peace Process," *Nonproliferation Review* 4 (Fall 1996).

³⁹ Shai Feldman, "Israeli Deterrence and the Gulf War," in Joseph Alpher, ed., *War in the Gulf: Implications for Israel* (Jerusalem: Jerusalem Post Press, 1992); Amatzia Baram, "Israeli Deterrence, Iraqi Responses," *Orbis* 36 (Summer 1992); Levran, *Israeli Strategy After Desert Storm*; Laura Zittrain Eisenberg, "Passive Belligerency: Israel & the Gulf War," *Journal of Strategic Studies* 15 (September 1992); Michael Gordon and Bernard Trainor, *The General's War* (Boston: Little Brown & Co., 1995); Lawrence Freedman and Efraim Karsh, *The Gulf Conflict* (Princeton, NJ: Princeton University Press, 1993); David A. Welch, "The Politics and Psychology of Restraint: Israeli Decision-Making in the Gulf War," *International Journal* 57 (Spring 1992), pp. 328-369

⁴⁰ See, for example, Yair Evron, *War and Intervention in Lebanon: The Israeli-Syrian Deterrence Dialogue* (Baltimore: Johns-Hopkins University Press, 1987);

Micha Bar, *Red Lines in Israel's Deterrence Strategy* (Tel Aviv : Ma'arachot, 1990); Avner Yaniv, *Deterrence without the Bomb* (Lexington, MA: Lexington Books, 1987); Jonathan Shimshoni, *Israel and Conventional Deterrence* (New York: Cornell University Press, 1988).

⁴¹ "President Warns Israel, Criticizes U.S." Baghdad Domestic Service in Arabic, April 2 1990, in FBIS-NES-90-064 (April 3, 1990), pp. 32-35; "Saddam Hussein Addresses Visiting U.S. Senators," Baghdad Domestic Service, April 16, 1990, in FBIS-NES-90-074 (April 17, 1990), pp. 5-13; "President on Readiness to Defend Iraq, Arabs," Baghdad INA, April 17, 1990, in FBIS-NES-90-075 (April 18 1990), p. 14-15.

⁴² "President Warns Israel, Criticizes U.S.," Baghdad Domestic Service, April 2, 1990, in FBIS-NES-90-064 (April 3, 1990), p. 32-35.

⁴³ "Saddam Speaks," Baghdad Domestic Service, January 6, 1991, in FBIS-NES-91-004 (January 7, 1991), pp. 24-26.

⁴⁴ "President Warns Israel, Criticizes U.S."

⁴⁵ "President on Readiness to Defend Iraq, Arabs," Baghdad INA, April 17, 1990, in FBIS-NES-90-075 (April 18, 1990), pp. 14-15.

⁴⁶ Kenneth Kaplan, "Iraq Holds the Key," *Jerusalem Post*, September 24, 1989, p. 4.

⁴⁷ Quoted in *The Guardian*, August 31, 1990, cited by Martin Navias, *Saddam's Scud War and Ballistic Missile Proliferation* (London: The Center for Defence Studies, and Brassey's, 1991), fn. 27.

⁴⁸ "Iraq Attack on Israel Unlikely-Shomron," *Jerusalem Post*, September 17, 1990, p. 8.

⁴⁹ Asher Wallfish, "Fear Shows Through Iraqi Bravado: Interview with MK Binyamin Ben-Eliezer," *Jerusalem Post*, April 22, 1990, p. 1.

⁵⁰ *Ha'aretz*, June 9, 1981, cited in Shai Feldman, "The Bombing of Osirac Revisited," *International Security* 7 (Fall 1982), pp. 122.

⁵¹ *Ibid.*

⁵² Ariel Sharon, quoted in FBIS, December 18, 1981, cited by Feldman, "The Bombing of Osirac Revisited," pp. 122.

⁵³ See Navias, *Saddam's Scud War and Ballistic Missile Proliferation*, p. 14; Avigdor Haselkorn, *The Continuing Storm: Iraq, Poisonous Weapons, and Deterrence* (New Haven: Yale University Press, 1999).

⁵⁴ Levran, *Israeli Strategy After Desert Storm*, p. 76.

⁵⁵ This focused approach to deterrence, centering on Saddam's home village of Tikrit, was proposed by Michael Eisenstadt, "The Sword of the Arabs: Iraq's Strategic Weapons" (Washington, DC: The Washington Institute for Near East Studies, Policy Paper 21, 1990), p. 56.

⁵⁶ "Saddam Hussein Addresses Visiting U.S. Senators," Baghdad Domestic Service, April 16, 1990, in FBIS-NES-90-074 (April 17, 1990), p. 7.

⁵⁷ "President Warns Israel, Criticizes U.S.," Baghdad Domestic Service, April 2, 1990, in FBIS-NES-90-064 (April 3, 1990), p. 35.

⁵⁸ "Saddam Hussein Addresses Visiting U.S. Senators," pp. 7-8.

⁵⁹ "President Warns Israel, Criticizes U.S.," p. 32.

⁶⁰ "President on Readiness to Defend Iraq, Arabs," Baghdad INA, April 17, 1990, in FBIS-NES-90-075 (April 18, 1990), p. 14-15.

⁶¹ "President Warns Israel, Criticizes U.S.," p. 32; "Iraq's Saddam Hussein," Amman Television Service, February 24, 1990, in FBIS-NES-90-039 (February 27, 1990), pp. 1-5.

⁶² Editorial, *Al-Jumhuriyah* (Baghdad), December 12, 1990, in FBIS-NES-90-239 (December 12, 1990), p. 32.

⁶³ "Saddam Speaks," Baghdad Domestic Service, January 6, 1991, in FBIS-NES-91-004 (January 7, 1991), pp. 24-26; see also *Al-Jumhuriyah* (Baghdad), January 16, 1991, as summarized by Baghdad INA and translated in FBIS-NES-91-013 (January 16, 1991), p. 30.

⁶⁴ "Baghdad 'Ready' for Military Confrontation," *Al-Jumhuriyah* (Baghdad) INA, December 15, 1990, in FBIS-NES-90-244 (December 19, 1990), p. 23.

⁶⁵ Editorial, *al-Qadishiyah* (Baghdad), December 17, 1990, in FBIS-NES-90-243 (December 18, 1990), p. 28.

⁶⁶ Sabah al-Lami, *Hurras-al-Watan*, May 13, 1990 (cited by Baram, "Israeli Deterrence, Iraqi Responses," p. 399, fn. 11). This analysis is consistent with the view that the Israeli nuclear and missile capabilities constitute an effective deterrent against "existential" attacks on national survival.

⁶⁷ Similarly, Haselkorn (*The Continuing Storm: Iraq, Poisonous Weapons, and Deterrence*, p. 23.) concludes, "It is unclear whether the disclosure of the

binary chemical capability was made in preparation for Iraq's invasion of Kuwait or was meant to deter an Israeli attack, as Baghdad claimed."

⁶⁸ Israeli Army Radio, in FBIS-NES (March 10, 1988), p. 37, cited by Michael Eisenstadt, "The Sword of the Arabs: Iraq's Strategic Weapons," Washington Institute Policy Paper 21 (Washington, DC: Washington Institute, 1990), p. 54.

⁶⁹ "Rabin Warns Arabs against Use of Chemical Weapons," Jerusalem Domestic Service in Hebrew, July 20, 1988, in FBIS-NES-88-140 (July 21, 1988), p. 29.

⁷⁰ See, for example, the statement by Dan Shomron quoted in "Iraq Attack on Israel Unlikely—Shomron," *Jerusalem Post*, September 17, 1990, p. 8.

⁷¹ "Israeli Sees Chemical Option Against Iraqis," *New York Times*, July 28, 1990, cited by Laura Zittrain Eisenberg, "Passive Belligerency: Israel and the Gulf War," *Journal of Strategic Studies* 15 (September 1992), pp. 307, n.7, 326.

⁷² The failure of the Patriots did not end official Israeli enthusiasm for ballistic missile defense (BMD), and in the past decade, the joint US-Israeli Arrow project has advanced rapidly to deployment of the first operational batteries. However, due to the limited capabilities of terminal BMD, Israeli strategic posture continues to be based primarily on deterrence, and not on defense, and this is not likely to change in the short term. For a summary of the Arrow program and planned follow-on projects, see Arieh Stav, ed., *Ballistic Missiles: The Threat and the Response* (London: Brassey's, 1999).

⁷³ Gerald M. Steinberg, "Israeli Responses to the Threat of Chemical Warfare," *Armed Forces and Society* 20 (Fall 1993), pp. 85-101.

⁷⁴ *Ha'aretz* (Tel Aviv), October 21, 1991, pp. 1, 3.

⁷⁵ This point was repeated by Brig. Gen. (Res.) Aharon Levran, "Return the Gas Masks," *Jerusalem Post*, December 13, 1992, p. 6.

⁷⁶ *International Herald Tribune*, August 31, 1991.

⁷⁷ Communique No. 7 issued by the Armed Forces General Command, Baghdad Domestic Service, January 19, 1991, in FBIS-NES-91-014 (January 22, 1991), p. 45.

⁷⁸ Communique No. 25 issued by the Armed Forces General Command, Baghdad Domestic Service, January 27, 1991, in FBIS-NES-91-018 (January 28, 1991), pp. 31, 39.

⁷⁹ Lawrence Freedman and Efraim Karsh, *The Gulf Conflict* (Princeton, NJ: Princeton University Press, 1993), p. 34.

⁸⁰ "Saddam Says Tel Aviv 'First Target' in War," Amman Domestic Service, December 24, 1990, in FBIS-NES-90-247 (December 24, 1990), p. 24. This point is also emphasized in Haselkorn, *The Continuing Storm: Iraq, Poisonous Weapons, and Deterrence*.

⁸¹ Eisenberg, "Passive Belligerency: Israel & the Gulf War," p. 304; Welch, "The Politics and Psychology of Restraint: Israeli Decision-Making in the Gulf War," p. 329.

⁸² Moshe Arens, *Broken Covenant* (New York: Simon and Schuster, 1995), pp. 152-158.

⁸³ *Ibid.*, pp. 304-327.

⁸⁴ Yitzchak Shamir, *Summing Up* (Boston: Little Brown and Co., 1994), p. 224. Throughout this period, the question of Israeli restraint was strongly debated, and a number of key ministers as well as the Air Force Chief of Staff advocated retaliation.

⁸⁵ "Shamir Interviewed on Gulf War, Peace Prospects," Jerusalem Israel Television Network, February 21, 1991, in FBIS-NES-91-036 (February 22, 1991), p. 51.

⁸⁶ Gerald Steinberg, "Israeli Nuclear Ambiguity: Evolution and Evaluation," in Louis Rene Beres, ed., *Security or Armageddon: Israel's Nuclear Strategy* (Lexington, MA: Lexington Books, 1985), pp. 29-44; Evron, *Israel's Nuclear Dilemma*; and Feldman, *Israeli Nuclear Deterrence*.

⁸⁷ "Shomron says Israel Capable of 'Painful Blow'," Jerusalem Domestic Service, December 28, 1990, in FBIS-NES-90-251 (December 31, 1990), p. 32.

⁸⁸ See, for example, Martin Navias, *Saddam's Scud War*, pp. 7-8; and Peter Herby, *The Chemical Weapons Convention and Arms Control in the Middle East* (Oslo: International Peace Research Institute, 1992).

⁸⁹ "Evans and Novak," CNN, February 2, 1991.

⁹⁰ Ze'ev Schiff, "Nonconventional Warning on Behalf of Israel," *Ha'aretz* (Tel

Aviv), February 4, 1991, p. A1.

⁹¹ Eisenberg, "Passive Belligerency: Israel & the Gulf War," p. 307.

⁹² See, for example, Robert Jervis, *Perception and Misperception in International Politics* (Princeton: Princeton University Press, 1976).

⁹³ "President Warns Israel, Criticizes U.S." Baghdad Domestic Service, April 2, 1990, in FBIS-NES-90-064 (April 3, 1990), pp. 32-35.

⁹⁴ "The Iraqi Initiative Exposes the Aggressors and their Objectives," *Al-Thawrah* (Baghdad), February 17, 1991, in FBIS-NES-91-033 (February 19, 1991), p. 62.

⁹⁵ Eisenstadt, "The Sword of the Arabs: Iraq's Strategic Weapons," pp. 5-8.

⁹⁶ Anthony H. Cordesman, *Transnational Threats From the Middle East: Crying Wolf or Crying Havoc?* (Carlisle, PA: Strategic Studies Institute, 1999), p. 169.

⁹⁷ "1 Million Reportedly Evacuated From Baghdad," AFP, December 21, 1990, in FBIS-NES-90-246 (December 21, 1990), p. 16.

⁹⁸ "Advice to Citizens in Case of Nuclear Attack," *Baghdad Al-Iraq*, December 31, 1990, in FBIS-NES-91-003 (January 4, 1991), pp. 34-36.

⁹⁹ See, for example, Feldman, "Israeli Deterrence and the Gulf War."

¹⁰⁰ Robert Joseph, "Deterring Regional Proliferation," *Washington Quarterly* 20 (Summer 1997), pp. 169-170.

¹⁰¹ Sagan, "The Commitment Trap," p. 86. (In this article, Sagan's main argument is that the American policy linking the threat of nuclear retaliation to deterring CBW attacks creates a "commitment trap", increasing the probability that the United States will use nuclear weapons in an inappropriate manner in future military conflicts. This issue is beyond the scope of this analysis focusing on the deterrence policies of regional actors.)

¹⁰² Cohen, *Israel and the Bomb*; Evron, *Israel's Nuclear Dilemma*; Steinberg, "Israeli Nuclear Ambiguity: Evolution and Evaluation," pp. 29-44.

¹⁰³ Wolfgang K. H. Panofsky and George Bunn, "The Doctrine of the Nuclear-Weapon States and the Future of Non-Proliferation," *Arms Control Today* 24 (July/August 1994), p. 3.

¹⁰⁴ Levran, *Israeli Strategy After Desert Storm*, pp. 14-15, 78-79.

¹⁰⁵ *Ibid.*, p. 165.

¹⁰⁶ For similar conclusions, see Eisenberg, "Passive Belligerency: Israel and the Gulf War," p. 307; Feldman, "Israeli Deterrence and the Gulf War," pp. 184-208; Levran, *Israeli Strategy After Desert Storm*, pp. 74-75; Baram, "Israeli Deterrence, Iraqi Responses," p. 399.

¹⁰⁷ There are alternative explanations for Iraq's non-use of CBW, including questions regarding the effectiveness of the warheads and a technical inability to launch them under the pressure of allied bombardment. Iraqi officials have also claimed that they were deterred from using chemical or biological weapons against coalition targets and military forces by fear of American responses, including the possible use of nuclear weapons, but these explanations should be treated skeptically. Sagan ("The Commitment Trap," pp. 91-96), rejects this claim, arguing that the Iraqi statements after the war were self-serving, but he does not consider the role of Israeli deterrence or provide an alternative explanation.

¹⁰⁸ Thomas McNaughter, "Ballistic Missiles and Chemical Weapons: The Legacy of the Iran-Iraq War," *International Security* 15 (Fall 1990), p. 26.