

# THE NUCLEAR EQUATION IN A NEW MIDDLE EAST

by Avner Cohen

*Avner Cohen is a Visiting Fellow at the Center for International Studies at the Massachusetts Institute of Technology, and co-director of the MIT Project on Nuclear Arms Control in the Middle East.<sup>1</sup>*

**D**ramatic political developments have changed the face of the Middle East during the last year. The Israeli-PLO Oslo and Cairo accords that established the Palestinian National Authority in the Gaza Strip and Jericho, and the Israeli-Jordanian peace treaty signed on October 26, 1994, are clear harbingers of a new era. Deep-rooted threat perceptions between Arabs and Israelis are changing; a new age of Arab-Israeli economic cooperation may be on the horizon. After a bloody, century-long conflict, including five major wars since 1948, the Arab-Zionist dispute seems to be moving toward reconciliation.<sup>2</sup>

What will be the impact of these fundamental changes on the nuclear question in the Middle East? Can they open the door to progress on the question of weapons of mass-destruction (WMD) in the Middle East, especially its nuclear aspect? Specifically, are there circumstances under which Israel, the only *de facto* nuclear state in the region, could be brought into the nonproliferation

regime? What about the Iran-Iraq nuclear entanglement? Can both issues be dealt with under a regional arrangement? Can new global approaches be reconciled with a regional approach in the Middle East?

This article attempts to identify and explore some of these issues, examining the Middle Eastern nuclear situation in light of the experience of Iraq, North Korea, South Africa, and Latin America. It begins with a *tour de horizon* of both the positive and negative nonproliferation trends in the region, then considers the deadlock on the nuclear issue as manifested in recent regional discussions. Since both Arabs and Israelis now agree that the long-term objective of those talks should be the establishment of a zone free of all weapons of mass destruction, including nuclear weapons (WMD), the article examines the feasibility of such a zone in the Middle East by comparing the situation in this region with both the establishment of a nuclear-weapons-free zone (NWFZ) in South America under the Treaty of Tlatelolco and

South Africa's unilateral decision to dismantle its nuclear weapons program and join the NPT. Although my findings present a rather pessimistic assessment of the near-term likelihood of establishing a NWFZ in the Middle East, they also point to other possible confidence-building measures that could eventually lead to the establishment of such a zone. Finally, the article comments more optimistically on the applicability to the Middle East of the recent proposal for a global ban on the production of fissile material.

## THE CURRENT SITUATION IN THE MIDDLE EAST: NEGATIVE LEGACIES, POSITIVE DEVELOPMENTS

The future of nuclear proliferation in the Middle East depends primarily on two broader and opposing regional developments: progress toward the settlement of the Arab-Israeli conflict, and political, social, and technological developments in states that are outside the peace process. Other global developments,

such as the successful implementation of the nuclear accord between the United States and the Democratic People's Republic of Korea (DPRK),<sup>3</sup> and decisions about the future of the NPT and related treaties, will also have an important impact. The present situation, therefore, is a mixture of hopeful and worrisome possibilities.

On the hopeful side, there is a striking difference between the situations in 1990 and today. In July 1990, the Middle East was about to be engulfed in the most dangerous nuclearization spiral it had ever faced; Iraq's nuclear quest threatened to escalate the Arab-Israeli conflict and other Arab-Arab rivalries to the nuclear level, posing an unprecedented threat to the entire region.<sup>4</sup> Four years later, the end of the Arab-Israeli conflict appears to be near. In the wake of the end of the Cold War, the collapse of the Soviet Union, and, most significantly, the defeat of Arab radicalism in the Gulf, most of the region's states have embarked on the road to peace. If the peace process prevails, the Middle East is likely to pursue the de-nuclearization trend that we have recently witnessed in other parts of the globe, from South Africa and Latin America to the United States and Russia. For the first time in the history of the Middle East, and as a direct outcome of the Madrid peace conference, a multi-lateral Working Group on Arms Control and Regional Security (ACRS) has been founded; the proposal to establish a WMDFZ is now on its agenda. Peace and nonproliferation inevitably go hand in hand.

But there is worrisome news, too. The region's two most determined proliferators, Iraq and Iran, are not parties to the peace process, each

for its own reasons. While Iraq is certainly more advanced in the nuclear field, it poses less of a political problem, at least for now. Iraq is a defeated nation, isolated within the Arab world, still under trade sanctions, and, more significantly, under the strictest internationally-managed monitoring system any modern state has faced. Its nuclear weapons program, damaged by the Gulf War, has been either dismantled or "rendered harmless" by 27 International Atomic Energy Agency (IAEA) on-site inspections (as of January 1995) under U.N. Security Council Resolution 687 and other relevant resolutions.<sup>5</sup>

### Iraq

Since mid-1991, Iraq's nuclear, biological, and chemical weapons programs, as well as its ballistic missile programs, have been meticulously studied by the United Nations Committee on Iraq (UNSCOM) and the IAEA. In order to develop a long-term monitoring plan under Security Council Resolution 715, Iraq was required to provide UNSCOM/IAEA a full inventory of its plants, machinery, equipment, and materials that could be used for production of weapons of mass destruction. Though UNSCOM maintains that Iraq has complied with Resolution 715,<sup>6</sup> Iraq is still believed to "retain technology and material relevant to its weapons program."<sup>7</sup> On the nuclear issue, the IAEA Action Team on Iraq devised a long-term plan to monitor Iraq's nuclear weapons program and to verify that it could not be reconstituted. One of the early components of this plan was the establishment of a waterway-monitoring program sensitive enough to detect the

nuclear and chemical signatures of a clandestine nuclear program. The first results of this program indicate that no unknown nuclear facility has been operating clandestinely in Iraq.<sup>8</sup>

However, even under the present control regime, Iraq still poses a serious proliferation threat. The IAEA June 1993 Fact Sheet assesses and characterizes the remaining Iraqi nuclear threat in this way:

The theoretical aspect of the program is the largest worry under the current sanctions regime. This is an ideal time for the low visibility theoretical work to progress. It could lead to a more efficient experimental program in the future if, for any reason, Iraq were to resume [its nuclear program].

The key remaining element is the technical experience that has been gained to date. If this expertise is held together, the design and organization process and possibly small scale research activity may continue with low probability of being rediscovered. These are low signature activities not likely to be revealed to inspectors without extraordinary luck.<sup>9</sup>

Clearly *knowledge* and a *trained cadre* are the components of a nuclear weapons program hardest to identify and safeguard, not only under the IAEA/NPT safeguards system, but even under an Iraqi-style monitoring regime. Although knowledge and personnel cannot be placed under safeguards, let alone "dismantled," they are not enough in themselves to produce nuclear weapons. The critical issue, of course, is the availability of fissile material that would determine whether Iraq would be able to reconstitute its nuclear weapons program.

Hence, the key for successfully monitoring Iraq in the nuclear field is denying it access to fissile material. Since reconstituting an indigenous program to produce fissile material is a high-profile activity—in terms of cost, visibility, foreign assistance, and personnel—under the terms of long-term monitoring it would be very difficult for Iraq to conceal. However, monitoring *foreign* purchase of fissile material or even complete weapons, is the weakest spot of an effective long-term monitoring system. Given the situation in the former Soviet Union, this danger cannot be overstated.<sup>10</sup> According to William Studeman, Deputy Director of the Central Intelligence Agency (CIA), “If Iraq somehow acquired sufficient weapons-usable material, it could probably fabricate a nuclear device in as little as a year.”<sup>11</sup> While the CIA believes that “Iraq will not be able to restart a major weapons program as long as U.N. inspections and international sanctions are aggressively enforced,” it also believes that Iraq’s 7,000 nuclear scientists and technicians could produce “enough fissile material to complete a bomb within five to seven years if inspections and sanctions were to cease.”<sup>12</sup> It is vital, then, that the international community remain faithful to the letter of its commitment to implement the Security Council resolutions concerning Iraq.

## Iran

The Islamic Republic of Iran is a different matter altogether. The Iranian proliferation effort, while certainly less advanced than that of Iraq, is more of a political problem. Iran is not a defeated nation under an unprecedented Security Council/IAEA

inspection regime, nor a state under U.N. trade sanctions. Thus, it is more difficult to trace incriminating evidence of NPT violations there. In addition, Iran’s nuclear effort is still in an early phase, at a stage where it is probably impossible to discern even the legal-conceptual difference between peaceful and non-peaceful activities. The Iranian case has neither the clarity of the Iraqi case after Security Council Resolution 687 nor the legal and political mechanisms to look for such clarity. To make a strong case about proliferation intentions and motivations is one thing; to prove legal violations of the NPT/IAEA safeguards system is another.

To date, all the visible indications are that the Iranian nuclear energy program is ambitious in goals but rudimentary in action, and it appears not yet to be focused in any specific technological direction. Since the Gulf War, Iran has vigorously pursued a broad-based, multi-directional effort to acquire basic nuclear infrastructure and know-how. While several nations (Germany, France, Brazil, and India) recently declined to make lucrative nuclear deals with Iran due to U.S. pressure and the Iraqi experience, others (Russia, China, and Pakistan) were willing to accept Iranian assurances about its peaceful intentions and signed nuclear cooperation agreements with it. In particular, in January 1995 Russia signed an \$800 million agreement with Iran to complete the construction of the two big nuclear power stations in Bushehr, an ambitious nuclear project that Germany had started in 1974 under the Shah and abandoned more than half completed in 1979.<sup>13</sup> The proliferation residue of such a big nuclear project adds to questions already raised in

the wake of the 10-year Iranian-Chinese nuclear cooperation pact signed in 1990, under which China will provide Iran with two big research reactors and other related technology and expertise.<sup>14</sup> Despite their apparent legal compliance with the NPT, both agreements stir concerns over Iran’s access to nuclear technology.

In addition to the declared nuclear activities and sites under the jurisdiction of the Iranian Atomic Energy Organization, there are media reports, but no factual evidence, about secret nuclear weapons facilities under the control of the Revolutionary Guards and the Iranian Army.<sup>15</sup> There are also rumors about Iranian efforts to obtain nuclear weapons or fissile material from within the former Soviet Union, but they too remain merely rumors.<sup>16</sup>

As a signatory of the NPT, as long as it is not proven to be violating its NPT/IAEA obligations, Iran must be granted the presumption of innocence. As of January 1995, the IAEA has found no evidence of such violations. In November 1993, an IAEA team visited Iran and was granted access to both undeclared sites and buildings, but found no evidence of a secret weapons program. To be sure, this was also the judgment of the IAEA in Iraq prior to the Gulf War. Although in the wake of the Iraqi experience, the IAEA has insisted on its right to conduct “special inspections” in undeclared buildings and sites, this determination was not carried out in the North Korean case, and according to the terms of the U.S.-DPRK agreement it could take five years (or more) before such inspections are conducted in North Korea.<sup>17</sup>

While nuclear activities in Iran are rather uncertain and ambiguous,<sup>18</sup> it is easier to pinpoint Iran's proliferation motivations. In his book *Iran's National Security Policy*, Shahram Chubin notes that Iran's international outlook is made up of an "unstable mixture of grievance and ambition," the kind of blend of national grandeur and anxiety that was present when other states (notably France and the United Kingdom) made their decisions to go nuclear.<sup>19</sup> Despite economic distress and internal political divisions, post-Khomeini Iran projects itself, at home and abroad, as a defiant Islamic nation destined for greatness and hegemony, the foremost Muslim republic promoting "true" Islam. At the same time, not unlike other hegemony-seeking powers, Iran views itself as surrounded by enemies, regionally and globally: Iraq, the Gulf states, Israel, and the United States. From an Iranian perspective, the end of the Cold War left the United States as the preeminent superpower: dominating the Security Council, dictating supplier cartels, and selling and restricting arms and technology as it sees fit. At home, Chubin writes, "this sense of encirclement feeds into its fears of fragmentation and of hostile powers' attempts to promote its disintegration."<sup>20</sup> In summing up, "Iran's view of the world and its own role are the strongest motivants for acquiring nuclear weapons."<sup>21</sup>

Nuclear weapons are the ultimate symbol of defiance, technological achievement, and deterrence vis-à-vis all of Iran's potential enemies.<sup>22</sup> The lessons of the Gulf War—Saddam Hussein's fateful miscalculations in Kuwait, his devastating defeat in Desert Storm, Security Council Resolution 687, and subsequent rev-

elations about the Iraqi nuclear program—must have reinforced Iranian perceptions about nuclear weapons. Iran's efforts to acquire the most powerful ballistic missiles available abroad strengthen suspicions about its nuclear intentions.<sup>23</sup>

Iranian leaders no longer openly advocate acquiring nuclear weapons, as President Rafsanjani did in 1988<sup>24</sup>; their statements on this matter leave Iran's ultimate intentions somewhat ambiguous. It denies any military intentions, but it does so, as Chubin puts it, "with faint conviction."<sup>25</sup> On some occasions, Iranians cite their NPT pledge and their proposal for a NWFZ in the Middle East as proof of their nation's peaceful intent; on others they highlight "Iran's right to obtain nuclear weapons as long as Israel has them."<sup>26</sup> Along these lines, Iran rejected President Bush's proposal of May 31, 1991, urging all states in the Middle East not to produce fissile materials, calling it "discriminatory" and once again invoking Israel's existing fissile material stockpile. Characterizing the Iranian nuclear *modus operandi*, Chubin notes:

If Iran is seeking to acquire nuclear weapons it would be in keeping with its style to deny it to avoid confrontation, to envelop its motives in discussion about industry and technology and to position its own case within that of a class of developing states interested in unhindered technology transfers. Its approach would be by indirection and deception; it would avoid a more detectable "crash program," inviting unhindered inspections and accepting safeguards while counting on its ability to slip through the cracks of inspections and international bureaucracy and the ambiguities of "dual use," whether in nuclear or

chemical and biological areas.<sup>27</sup>

The primary lesson of the Iraqi case is that a clandestine nuclear weapons program of the magnitude that was revealed there can happen again. Iraq taught us how difficult it is to deny a determined proliferator state, even a state that is a signatory of the NPT.<sup>28</sup> The IAEA safeguards were designed primarily to verify or to trace the diversion of declared assets; they were not designed as a mechanism to detect and reveal subversion or clandestine activities.

The intelligence failure in the case of Iraq's nuclear program shows not only that mistakes can be made in the allocation and evaluation of intelligence collection efforts, but also how profoundly imperfect the entire enterprise of nuclear intelligence is. Some of the most significant Iraqi nuclear facilities remained unknown months after UNSCOM had started its operations in Iraq; the first post-Gulf War discoveries were largely due to luck.<sup>29</sup>

Iran may be a similar case. Since the Gulf War, Western intelligence organizations, notably the CIA, have openly and unequivocally asserted that Iran is pursuing the development of nuclear weapons, but are uncertain how long it could take Iran to build its first atomic bomb. They offer estimates that vary from less than five years to "seven to fifteen" years.<sup>30</sup> At this rudimentary stage, it is difficult to translate a possible intention into a technological timetable. Iran is years away from being able to produce fissile material on its own, and probably no one, including Iran's nuclear officials, can assert with authority and precision how much time it may take it to do so. At this time, there is no objectively meaningful estimate be-

cause there are simply too many political, financial, and technological uncertainties, especially since the program depends so heavily on foreign assistance.<sup>31</sup>

The success or failure of nonproliferation efforts in both Iraq and North Korea is bound to have an impact on Iran. If Iran is to be persuaded not to go nuclear, it must be convinced that the IAEA will keep Security Council Resolutions 687 and 715 to the letter, and will not allow an Iraqi nuclear weapons program to re-emerge. It also must be convinced that the IAEA, backed by the Security Council and the United States, is serious in its efforts to institutionalize the lessons of Iraq with other potential proliferators within the NPT by insisting on "special inspections," and that it will be costly for it to violate its NPT obligations or simply to withdraw from the treaty. It is too early to say if the U.S.-DPRK agreement of October 1994 will strengthen or weaken Iranian nuclear determination.<sup>32</sup>

Iran's nuclear equation is not unrelated to other political developments in the Middle East. To begin with, the Islamic Republic of Iran is not on the sidelines on the matter of the Arab-Israeli reconciliation. Of all Islamic states, Iran may be the most opposed to the trend toward peace.<sup>33</sup> The success of the Arab-Israeli peace process could marginalize Iran in the region, further isolating it and jeopardizing its strategic-ideological interests.<sup>34</sup> It is this context that makes the Iranian nuclear program potentially so dangerous. The closer Iran gets to the bomb, the more it could radicalize and destabilize the Middle East.

## Israel

On the other side of the nuclear equation in the Middle East there is Israel's quarter-century of opaque nuclear weapons development.<sup>35</sup> Although it acquired its nuclear option sometime in the mid- to late 1960s, Israel has always been very cautious not to declare, test, or make any other visible use of it.<sup>36</sup>

For more than 25 years, Israel has been presumed to own both elements necessary for a mature nuclear weapons program: a stockpile of unsafeguarded fissile material and the technical know-how to build atomic weapons.<sup>37</sup> Since 1970, it has been commonly accepted that Israel has nuclear weapons, and no Arab state thus far equals Israel's presumed nuclear weapons capability, since Israel has made efforts to maintain a situation of undeclared nuclear monopoly in the region.<sup>38</sup> Despite their opposition to Israel's nuclear weapons, some moderate Arab states seemed more concerned after the Gulf War about Iranian/Iraqi nuclear ambitions than about Israel's "nuclear option."<sup>39</sup> A few Arab analysts even privately acknowledge that they perceive Israel's undeclared nuclear deterrence as having played a positive and stabilizing role in promoting Arab-Israeli peace because it has given Israel the courage to make painful territorial concessions.<sup>40</sup>

The approach of the NPT Review and Extension Conference, however, has reversed this trend in a rather dramatic way. The old issue of Israel's refusal to sign the NPT has become in recent months a matter of bitter and divisive diplomatic exchange between Israel and Egypt, and other states have followed the Egyptian line. Egypt has repeatedly

said that it will not agree to the indefinite extension of the NPT unless Israel also signs the treaty (or at least provides a definitive clarification as to when it will do so), and it has pressed all other Arab states to follow this line. The Egyptian-Israeli diplomatic confrontation over the NPT has damaged relations between the two states and has become a critical factor for the fate of the NPT Extension Conference. As of early February 1995, despite major diplomatic efforts, no acceptable compromise has been found on this matter.<sup>41</sup>

In Israel, too, behind the wall of official secrecy, recent events have forced a quiet rethinking of the nation's nuclear stance in the context of regional war and peace. Israeli policy-makers and strategists increasingly recognize that the twin pillars of Israeli nuclear policy for the last three decades—ambiguity about Israel's own nuclear program and a commitment to deny Arab nuclearization—ought to be reconsidered. First, the Arab world is by now convinced that Israel is a full-fledged nuclear weapons state, whether or not it acknowledges it. Second, and more significant, in the wake of the Iraqi experience, Israel has less confidence in its own ability to detect and destroy a nascent hostile nuclear threat unilaterally, as it did in 1981 in Iraq. While Israel sees itself as the first nation to use nondiplomatic means to counter hostile proliferation—Israel's precursor to the "counterproliferation" doctrine—cooperation in this regard with other states, particularly the United States, has now become a necessity.<sup>42</sup>

This latter concern is central to the geopolitical thinking of Israel's Prime Minister Yitzhak Rabin. He

sees a close inverse relationship between peace and regional nuclearization, and believes that the Gulf War has provided a window of opportunity of perhaps five to 10 years to minimize the threat of hostile nuclearization. During this period, Israel should contribute to a vigorous nuclear denial strategy via enhanced political and intelligence coordination with friendly states. More fundamentally, it should seek peace agreements with all its direct neighbors to reduce incentives and support for nuclearization in the Arab world, especially Iran.<sup>43</sup>

The result is a certain convergence of Arab-Israeli nuclear interests. More than ever, moderate Arabs and Israelis now share a concern about the dangers of nuclear proliferation and the need to deal with it on a collective-regional basis, and both Arabs and Israelis see it as an incentive for peace. In particular, both sides recognize that a vision of future regional security and arms control in the Middle East must include the nuclear issue. But it is one thing to recognize an issue, and another to come up with mutually acceptable ideas and modalities for dealing with it. The nuclear issue, as all the parties in the ACRS recognize, is by far the most difficult and sensitive of all the issues of regional arms control, conceptually and practically, politically and technically.

#### **WHERE DOES THE MIDDLE EAST GO FROM HERE?**

Negotiating regional arms control, especially nuclear arms control, is new to the states of the Middle East. Until recently there was no regional forum to negotiate and discuss such issues; the context of the Arab-Israeli conflict did not

permit its existence. The notion that they could sit with the Israelis and talk regional security and arms control was for years unthinkable to the Arabs; it would have meant *de facto* recognition of Israel, which was anathema. This does not mean, of course, that states of the region have not made declarations on general and nuclear disarmament before. Endless speeches on disarmament were made over the years by Arab and Israeli diplomats at the United Nations and other international fora, with Arabs calling for nuclear disarmament and pointing at Israel's refusal to sign the NPT, while Israel in return called for lasting peace to be followed by measures of general disarmament, all to score points and counterpoints in the Arab-Israeli propaganda battle. More recently, three major proposals aimed at solving the nuclear dilemma have been discussed regarding the Middle East: a NWFZ; Israeli adoption of the South African nuclear disarmament model; and a fissile material cutoff. Each of these issues will be examined in detail.

#### **A Middle East NWFZ: Possibilities and Problems**

One well-advertised disarmament idea that has been circulated over the years and publicly endorsed by both Arabs and Israelis, was to establish the Middle East as a NWFZ. Iran and Egypt first cosponsored such a resolution at the U.N. First Committee of the General Assembly in 1974, and it was adopted on December 9, 1974, as Resolution 3263, by 128 votes to none, with only two abstentions (Israel and Burma). Since then, the General Assembly has annually re-adopted the resolution to establish a NWFZ

in the Middle East, with slight variations from year to year. In 1980, for the first time, Israel joined the NWFZ resolution at the United Nations. Since then the resolution has been annually adopted unanimously without a vote. Notably, all the Middle Eastern governments express support for the idea of establishing a NWFZ in their region.<sup>44</sup>

However, this apparent regional consensus has gone nowhere and means very little, the prerequisites that each side stipulated in its support of the NWFZ being patently unacceptable to the other. As a condition for the establishment of a NWFZ in the Middle East, the Egyptian proposal stipulated all parties' adherence to the NPT. To highlight that point, Egypt ratified the NPT in early 1981, demonstrating its commitment to the idea of establishing a NWFZ, even though Israel had not done so. For Egypt, the NPT/IAEA safeguard regime was an indispensable mechanism for the establishment of a NWFZ in the region. Avoiding the need for direct regional negotiations, the NPT kept the nuclear issue isolated from other regional security issues, and would require Israel to accept full-scope safeguards on all its nuclear facilities. While the Egyptian proposal looked like a regional approach, in fact it was built on the NPT's universal mechanism.

Israel, which has refused to sign the NPT, emphasized in its own resolution the difference between the regional and the global approaches to nonproliferation. The Israeli proposal called "upon all states in the Middle East and non-nuclear weapons states adjacent to the region...to convene at the earliest possible date a conference with a view to negotiating a multilateral treaty establish-

ing a nuclear-weapon-free-zone in the Middle East."<sup>45</sup> Israel proposed the NWFZ as a way to highlight its nonproliferation interest, despite its specific objections to the NPT. For Israel, a NWFZ was a substitute to the NPT/IAEA mechanism, which Israel considered deficient. It was a way for Israel to show its own vision of a peaceful Middle East free of nuclear weapons, and a way to maintain that there is another nonproliferation avenue—the regional one—besides the universal NPT approach. For Israel, the terms and modalities of a NWFZ in the Middle East must be determined only through direct negotiations among all the regional parties, in relation to other regional security and arms control issues and in direct reference to the entire question of peaceful coexistence in the Middle East.<sup>46</sup> Behind the appearance of regional consensus, there is a deadlock built upon opposing interests.<sup>47</sup>

In the pre-Gulf War era, this impasse over the NWFZ was politically immaterial. While both sides could claim the moral high ground, they knew that the entire exercise at the United Nations was futile; at best it presented different visions of the future, at worst, it was no more than a game of diplomatic posturing.<sup>48</sup>

### **Lessons from the Treaty of Tlatelolco?**

One way of highlighting the difficulties of establishing a NWFZ in the Middle East is to compare it with the history of the NWFZ in South America. The lessons learned in South America, the first continent to have established a NWFZ and the case that Israel cited as a demonstration of the regional approach to nonproliferation, could be of great

relevance to the Middle East. The Latin American experience shows what political conditions must be met in order to make serious measures of denuclearization possible, especially as it applies to most technologically advanced states. The Argentina-Brazil nuclear accords suggest that democratization is vital to the creation of the proper climate of trust needed for regional safeguards arrangements.<sup>49</sup> On the other hand, the South American experience also shows how difficult it is to translate the vision of NWFZ into a political reality.<sup>50</sup>

Although the Treaty of Tlatelolco for the Prohibition of Nuclear Weapons in Latin America and the Caribbean was conceived in the early 1960s, completed and opened for signature in 1967, and legally entered into force in April 1968, it took 26 more years of negotiations, political stalemates, and amendments to bring it to full realization. Over these years, long-time rivalry and suspicion between the continent's two most advanced nuclear nations, Argentina and Brazil, made the Treaty of Tlatelolco more of a vision for the future than a political reality, as these two nations failed to bring it into force on their territories. Without Argentina and Brazil as full parties to the treaty, there could be no real NWFZ in Latin America. Only now, three decades after its inception, is the idea of a NWFZ in South America becoming a political reality.<sup>51</sup>

Three factors were important on the long road to a Latin American NWFZ, and must be considered if the Latin American experience is to be relevant to the Middle Eastern case. First, it took three decades to translate the consensus on the idea of establishing a NWFZ into a con-

crete reality. Second, it was primarily fundamental democratic changes in both Argentina and Brazil—the return of civilian-democratic leadership in both countries—that allowed them to relax the secrecy and suspicion between the two nations. Third, the key to the adherence of Argentina and Brazil to a NWFZ was the creation of an independent, binational institutional framework, based on the principle of reciprocity and mutuality, outside the legal and institutional framework of the Tlatelolco Treaty. The essential presumption of the new framework is the equal technological status of both nations. Positive changes in the global climate superpower nuclear reductions, adherence of France and China to the NPT, South Africa's dramatic decision to end its nuclear program, and the lessons of Iraq may also have helped create the right context for bringing Argentina and Brazil into full adherence to the Treaty of Tlatelolco.

Even in a peaceful and relatively homogenous continent such as Latin America, certain conditions had to be met before a NWFZ could be implemented, and the Latin American experience, complex and lengthy as it was, pales by comparison to the complexity of the Middle Eastern nuclear situation. In at least four areas essential to the establishment and the implementation of a NWFZ the Middle East presents itself as substantially different from, and more difficult than, the South American experience: (1) the geographical definition of the zone, (2) the political underpinnings of the nuclear situation; (3) the existence of nuclear weapons capabilities in the zone; and (4) issues of verification and linkages to other disarmament and arms control agreements.

Establishing the boundaries of the NWFZ in the Latin American continent and the Caribbean was straightforward: Latin America is geographically defined by distinct natural and cultural boundaries. A preliminary look at the Middle East and its history shows that the idea of the Middle East as a distinct geographic region is a legacy of European colonialism; its boundaries have been drawn differently at different times, by different political powers, and for different purposes. The very idea of a "Middle East" is ultimately a historical-political contingency.

Demarcating the boundaries of the Middle East for a NWFZ is complicated by regional and inter-regional conflicts and alliances, as well as the potential of certain peripheral states to develop nuclear weapons and means of delivery. This reality affects the threat perceptions of the region's core states. Some of the most desirable states to be included in a NWFZ in the Middle East—the Maghreb states, Pakistan, the Sudan, and perhaps even Iran—are not Middle Eastern by most standard geographical definitions. The Arab-Israeli conflict—arguably the defining conflict of the Middle East—intersects with and converges into other ethnic-religious and political conflicts and alliances in and across the region; some of those conflicts (Iran-Iraq, India-Pakistan) have clear nuclear implications.<sup>52</sup>

The political realities underlying the nuclear reality in the Middle East are also a world apart from the South American case: Latin American states share a historical, cultural, religious, legal, and linguistic heritage. In the South American continent there is nothing comparable to the profound enmity that pervaded

the Arab-Israel conflict; no protracted military conflict defined that regional political system. No South American nation has ever felt the kind of threat Israel did; no South American nation's legitimacy as an independent state was questioned. The nuclear rivalry between Argentina and Brazil was about continental prestige, influence, commerce, leadership, and the like, but it had nothing to do with their "right to exist." In the Middle East, it was precisely a sense of existential threat and the denial of its legitimacy by its neighbors that led Israel to seek a nuclear weapons option in the first place.

The South American situation of relative symmetry in nuclear fuel-cycle capabilities between the two largest and most advanced states in the region, Argentina and Brazil, does not exist in the Middle East. Israel's advantage in the nuclear field, including its presumed weapons capability, greatly complicates the issue. There is no historical precedent for establishing a NWFZ among regions and states where advanced nuclear weapons capabilities have been fully developed. Neither Argentina nor Brazil actually built such weapons, though there is little doubt they considered that option. According to Article I of the Treaty of Tlatelolco, its contracting parties are prohibited from "the testing, use manufacture or acquisition by any means whatsoever of any nuclear weapons"; in addition, they are forbidden from "the receipt, storage, installation, deployment and any form of possession of any nuclear weapons." The treaty's basis is the presumption that none of its adherents had previously built or possessed nuclear weapons.

Finally, with regard to verifica-

tion, past Israeli manufacture of nuclear weapons raises a series of very difficult questions that were never contemplated by the framers of the Treaty of Tlatelolco. This treaty, like the NPT, contains no mechanisms for rolling back an existing nuclear weapons program; nor does it address the issues of safeguard procedures for weapons-grade fissile material or control over nuclear weapons design knowledge. These would be serious obstacles to applying the Latin American model to the Middle East.

### **The Middle East after the Gulf War: Remaining Obstacles**

Obviously, some of the *formal* reasons for the impasse have been removed in the wake of the Gulf War and the Madrid peace conference, with the establishment of the ACRS forum satisfying the Israeli demands for a regional approach. However, the *substantive* reasons for the deadlock are far from being overcome. Some of the most relevant states in this regard are missing from the new regional forum. Neither Iran nor Iraq is a party to the ACRS. Syria, while negotiating peace and security with Israel at the bilateral level, decided not to attend the multilateral meetings until it saw significant progress in the bilateral talks. These abstentions make it unlikely that any substantive regional arms control agreements can soon be concluded at the ACRS. Even more importantly, on the nuclear issue Arabs and Israelis have opposite interests, approaches, priorities, and agendas. This fundamental difference has become evident in all the ACRS rounds held thus far. The apparent consensus on the long-term objectives of the process—the establish-



ment of a zone free of all weapons of mass destruction—disguises the reality that these objectives are not likely to be translated into political action anytime soon.

Why is the nuclear issue in the Middle East so intractable? Because of the special character of the nuclear situation in the Middle East. There is a vast asymmetry in nuclear capabilities between Israel and all the other states in the region; Israel has established a *de facto* monopoly on nuclear deterrence. Such a fundamental asymmetry did not exist when the United States and the Soviet Union were conducting nuclear arms control negotiations in the 1960s; nor did it exist in the less structured and more rudimentary cases of nuclear rivalry between India and Pakistan or Argentina and Brazil.

Underlying this asymmetry (but hardly mentioned) is a fundamental divergence of interests and priorities between the parties to the ACRS. The Arab states, especially Egypt, seek to focus on the nuclear issue and to isolate it as much as possible from the rest of the security agenda. For Egypt, bringing an end to Israeli nuclear superiority is probably the most important single item on its national arms control agenda. It insists on entering into negotiations as early as possible, primarily through existing international treaties and organizations such as the NPT and the IAEA.<sup>53</sup> Egypt conceives of the establishment of a NWFZ through a predetermined and relatively autonomous time sequence, including both political declarations and activities on the ground.

Beyond the official Egyptian position, Egyptian analysts have repeatedly made the point that in or-

der to discuss the establishment of NWFZ or WMDFZ in the Middle East, Israel must ease its official policy of nuclear ambiguity and must accept some measure of transparency for its nuclear capability, without which it would be impossible to negotiate any nuclear arrangement. In this regard, some Egyptians have privately proposed that the time sequence to establish such a zone could be a very long one, 15 or even 20 years, but agree that in the end “all Israeli nuclear weapons must be dismantled.”<sup>54</sup>

Israelis, on the other hand, want to keep their nuclear monopoly indefinitely, or at least until peace is expanded and firmly established, and to keep the nuclear bargaining card in play at least until the peace-making process is complete, insisting that the establishment of a NWFZ ought to be the last stage of the arms control negotiations, linked to other issues of regional security and arms control. For them, the nuclear issue symbolizes the last stop of the arms control path; it is the strength that allows them to make territorial concessions.<sup>55</sup> In general, Israel insists that the nuclear issue cannot be isolated from the rest of the arms control package, as the NPT tries to do. On the contrary, discussion of steps toward the establishment of a NWFZ must be linked with political progress on the peace front, as well as with progress in other areas of arms control, both conventional and non-conventional. Since the parties do not start the bargaining process from positions of relative equality, Israel has a clear edge and will want as many gains in peace and security as possible before it makes concessions on its nuclear option.

This issue is compounded by

Israel’s long-standing policy of ambiguity regarding its nuclear capability, manifested by the three decades-old formula, “Israel will not be the first to introduce nuclear weapons to the region.” A certain transparency is required for any process of arms control, as proved since the early arms control negotiations between the United States and the Soviet Union some 30 years ago. In order to negotiate such agreements, the negotiating parties must know and openly communicate what is on the table. Opacity, or lack of transparency, makes it very difficult for the parties even to agree upon the appropriate vocabulary that forms the basis of the negotiation. For example, while the Arabs insist on “a full accounting of Israel’s nuclear arsenal” as a necessary step to establish a NWFZ, the current Israeli discourse does not allow discussion of “nuclear weapons.” In order to “eliminate” or “dismantle” weapons, those weapons need first to be “introduced”; thus far, Israel claims not to have “introduced” them. The most that the Israeli nuclear discourse allows is to refer to its “nuclear option” as a “capability” consisting of “unsafeguarded nuclear facilities.”

The present deadlock is likely to remain as long as both sides continue to stake too much on their declared long-term objectives regarding the establishment of a WMDFZ, especially nuclear weapons. The substantive reason for this is known by all but openly acknowledged by none: until Israel feels secure in the new Middle East, it will continue to regard its unacknowledged nuclear deterrent as an essential ingredient for its national security. Many Israelis, especially on the Left, believe that Israel’s “nuclear option” has been significant in per-

suading the Arabs to work toward peace: the way the Israeli bomb has manifested itself, both as a symbol and as a perception in the Arab's mind, was an unspoken but important factor in Arab acceptance of Israel's existence. As noted earlier, many Arab strategists, especially Palestinians, half-openly agree with this view. Therefore, it is the idea of *lasting* peace, for some Israelis defined in terms of peace among democratic regimes, that is at the heart of the Israeli proposal for a NWFZ.

Furthermore, as long as Iran, Iraq, and Syria are not among the core states in the discussion of ACRS, it would be futile for Israel to negotiate the establishment of a NWFZ. Without the presence of the other relevant actors, there is no point for Israel in discussing these highly complex matters. In any case, as a matter of national strategy, Israel will continue to insist on linking progress on the nuclear issue with substantial political progress on the peace front, as well as on linking the nuclear issue to visible progress in other areas of arms control, both conventional and non-conventional. Realistically, then, it should be clear that Israel will not hasten to establish a NWFZ anytime soon. On the contrary, Israeli defense sources have publicly insisted that a leaner peacetime Israeli army must have an even stronger strategic deterrent component; it is that component, especially its "nuclear option" ingredient, that will preserve the peace.<sup>56</sup>

Though such views appear to be incompatible with the Rabin government's "visionary goals" for the arms control process, including its support of the establishment of a NWFZ in the Middle East, this may

not be necessarily true.<sup>57</sup> It only means that as a practical reality a NWFZ is not feasible for the near future. While it is important to define the long-term "visionary goals" for the arms control process, it should also be recognized that such a vision is only heuristic, not a blueprint for immediate action. The nuclear deadlock cannot be resolved by looking at the end point of the process—a NWFZ—but rather by breaking the process down into smaller and more manageable issues. Implicit in this point is a certain criticism of the mind-set that both Egypt and Israel bring to the nuclear issue.

In the case of Egypt, the country that continues to press on the nuclear issue, its persistence is self-defeating: pushing Israel into a corner on this highly sensitive issue has the potential to jeopardize and paralyze the entire arms control discussion.<sup>58</sup> Egyptians and other Arabs must understand and appreciate Israel's insistence on linkages between the question of a NWFZ and the establishment of lasting peace in the region. The nuclear issue cannot, and will not, be isolated from the rest of the regional security agenda, including other non-conventional matters and issues of restructuring conventional forces in the region.

As to Israel, long years of taboo and secrecy have resulted in a mind-set that resists the very theory and practice of arms control negotiations. Though there are hints of a readiness to rethink the issue, the burden of the past the fear of "the slippery slope" still dominates Israeli thinking on these sensitive matters, to a degree hard for an outsider to understand. If the arms control process requires educating oneself about the other's security and threat

perceptions, Israel must explain why it developed its "nuclear option" in the first place and why it must keep it until *lasting* peace arrives. To legitimate its right to a nuclear shield as its insurance policy until true and lasting peace comes, Israel must ultimately resolve the apparent tension between its desire to maintain a future nuclear option and its own visionary goals of a WMDFFZ for arms control. Only then can Israel solidify a national strategy for negotiations toward its establishment.

### Lessons from the South African Case?

The only case that is theoretically relevant to the Israeli nuclear case is that of South Africa, the world's first and only nuclear weapons state to have unilaterally and voluntarily dismantled its atomic weapons program and subsequently joined the NPT as a non-nuclear weapon state. The South African case sets up a certain precedent for "rolling-back" proliferation and highlights some of the extraordinary issues involved in any such process, some of which may be relevant to future Israeli considerations in the establishment of a NWFZ in the Middle East.

On March 24, 1993, President F. W. de Klerk told the South African Parliament that in the 15-year period covering the mid-1970s and 1980s, South Africa had embarked on a nuclear weapons program directed at providing the nation "a limited nuclear deterrent."<sup>59</sup> But in late 1989 and early 1990, shortly after de Klerk had assumed the presidency, "final effect was given to decisions that all the nuclear devices should be dismantled and destroyed." By that time the program had completed six gun-type fission

nuclear devices and a seventh was in the making. De Klerk made it clear that the nuclear project had been dismantled before South Africa acceded to the NPT on July 10, 1991, and that by that time, it no longer had nuclear devices. Two months later, South Africa concluded a comprehensive safeguard agreement with the IAEA under which it placed all its nuclear materials and facilities under international safeguards.<sup>60</sup>

The end of the Cold War, the collapse of the Soviet Union, and the withdrawal of the Cuban forces from Angola in South Africa in 1989-90 had left the nuclear rationale outdated. Not only was a nuclear weapons capability no longer needed, but the program had increasingly become a political liability, especially given the anticipated changes in the domestic power structure. The de Klerk government needed credibility for its claim that it had no hidden nuclear bombs. Accession to the NPT and full dismantling of its program would be in the best interests of the country, both at home and abroad. The South African nuclear weapons program was then dismantled in a controlled, safe, and secret manner, with no international body present to witness and verify the process. In addition to dismantling the seven nuclear devices, decontaminating the project's facilities, and converting them to conventional weapons and non-weapons commercial activities, all hardware components of the devices as well as design, manufacturing, and other sensitive data were destroyed.<sup>61</sup>

The South African case highlights the complex legal and practical issues involved in "rolling back" a nuclear weapons program, and shows that there are currently no in-

ternational norms guiding such a process. Neither the NPT nor the Treaty of Tlatelolco was designed to address this issue. Perhaps the most complicated and intriguing question in this regard concerns the past *knowledge/experience* of a state whose nuclear program has been dismantled: Can such knowledge/experience be truly "dismantled"? Can such "dismantling" be verified? Can it be "safeguarded"? Because such questions are of great relevance to the Israeli case, in the contexts of negotiating a NWFZ in the Middle East or of Israel joining the NPT, a brief analytical-legal discussion of these questions is appropriate.<sup>62</sup>

While Article II of the NPT forbids signatories to manufacture nuclear weapons, it provides few clues as to what to do with a country that once manufactured nuclear weapons and possesses such knowledge, and has now decided to accede to the NPT. Though such a country must fully dismantle its nuclear weapons arsenal and declare all its nuclear material and facilities under a full-scope safeguard agreement with the IAEA, such a former weapons state could still, under the NPT, keep much of its nuclear weapons capability intact. As noted earlier, the NPT is a future-oriented document; past achievements, including past knowledge/experience, need neither to be dismantled nor forgotten. As long as a small core of scientists and engineers is kept together, a nation's ability to manufacture nuclear weapons is hardly dismantled, and, at least in the short run, it could easily and quickly abjure its new obligations if its circumstances changed.<sup>63</sup>

Knowledge/experience is a commodity radically different from all physical commodities, in both prin-

ciple and practicality. While dismantling and safeguarding *physical entities* such as warheads, nuclear material, facilities, etc. are in principle straightforward matters, this is not the case with the dismantling of nuclear weapons *knowledge/experience* stored in human minds. Such a commodity is closely tied to the trial-and-error nature of discovery; it is the product of human shortcuts, tricks, and personal luck rather than simply a matter of abstract principles. Even if all the physical carriers of that knowledge such as technical reports, photos, tapes, discs, etc. were destroyed, as long as there is a cadre of scientists and engineers who once developed and produced atomic weapons, they could be developed again, and certainly faster than the first time. Nuclear weapons knowledge/experience has been recognized as an important commodity since the days of the Manhattan Project (Klaus Fuchs's drawing is a familiar example), and this is still true of South African, Iraqi, or Israeli weapons designers.

The result is a vast legal gray area as to what a nation is entitled to retain under the NPT after it has dismantled its nuclear weapons hardware. Would retaining a small research and design (R&D) but not production program constitute a violation of Article II of the NPT? This is unclear. And what about maintaining a modest stewardship program to retain a full and orderly historical record concerning the program's past technical accomplishments? Such a program would hardly seem to violate any explicit NPT obligations, which are after all future-oriented, not about erasing the past. But does it violate the *spirit* of the NPT pledge? Again, this is unclear. These ambiguities highlight

the virtues of the NWFZ over the NPT as a normative approach to denuclearization. While the NPT is vague and ambiguous on these matters of rolling-back, a NWFZ treaty need not be; it could be negotiated so as to tailor it to specific state and regional concerns.

To return to the case of South Africa, acceding to the NPT did not require it to make the kind of public disclosure regarding its nuclear past that it did, nor to shred any of its historical records concerning its political motivations and technical accomplishments. The de Klerk government acted in its own political interests and through its own calculations, clearly foreseeing the change of power that was only a year away.

However, the South African case appears too singular to be useful as a precedent. Should the three other *de facto* nuclear weapons states decide at some point to embark on rolling back their programs, it is unlikely that they will follow the South African example. As to the case of Israel, while there may be certain similarities between the ways that South Africa and Israel went nuclear, a thorough comparison of their present geo-strategic and domestic situations suggests that Israel must take a very different approach. Unlike South Africa, which took the *global* approach, acceding to the NPT and negotiating a safeguard agreement directly with the IAEA, Israel has made it clear that it will pursue denuclearization via a *regional* approach, with the final objective of establishing a NWFZ in the Middle East. Such negotiations must take into account the specific characteristics of the region, including the parties' broad arms control interests and priorities.

### **In Search of Interim Measures: The Fissile Material Cutoff Proposal**

For the reasons discussed in the last two sections, it is plain that the establishment of a NWFZ in the Middle East or a duplication of the South African model are not feasible at the present time. These steps should be the final objectives on the denuclearization spectrum, not the first. Putting too much political and intellectual emphasis now on final nuclear arrangements would be a political mistake for all parties, almost certain to generate stalemates, impasses, accusations, and counter-accusations inimical to the spirit of confidence-building. However, this does not mean that the alternative is to leave the nuclear issue untouched until a lasting peace in the Middle East is established. For reasons that tie together regional and global nonproliferation interests, it is clear that the nuclear issue in the Middle East, including the Israeli problem, will not go away. Though the visionary goals of making the Middle East free of all WMD cannot be reached just yet, some interim measures toward that objective could and should be discussed, including in the nuclear field.<sup>64</sup>

What interim measures are both constructive and achievable? One avenue, currently advocated by the United States and under discussions at the United Nations Conference on Disarmament (CD), is the proposal to prohibit the production of fissile material for weapons or unsafeguarded stockpiles, either through a global treaty or through a regional arrangement at the ACRS. Such a cutoff proposal has been on the agenda of the U.N. General Assembly First Committee since 1978,

but it was President Clinton's non-proliferation address to the United Nations on September 27, 1993, that urged a "multilateral convention prohibiting the production of highly enriched uranium (HEU) or plutonium for nuclear explosives purposes or outside international safeguards," that set the current context of discussion.<sup>65</sup>

While negotiations on the details of the cutoff treaty have hardly begun, the essential elements of the cutoff treaty are these: since a treaty obligation to ban production of fissile material must be verifiable, all signatory states must accept international (presumably IAEA) safeguards on all of their nuclear facilities, past or present, to verify that no weapons-usable fissile materials are produced (although states could still produce fissile material for non-weapons purposes, such as reactor-grade plutonium or low-enriched uranium, under safeguards).<sup>66</sup> Previously-produced fissile material, either in nuclear weapons or in stockpiles, could remain outside safeguards. No other nuclear weapons-related activities, other than production of new fissile material, are to be affected by the cutoff treaty; these would remain outside safeguards.<sup>67</sup>

Though the cutoff treaty, like the Chemical Weapons Convention (CWC), is proposed as a global convention, it would apply no additional legal constraints on non-nuclear-weapon states already parties to the NPT; under Article III those states must place all their nuclear material under IAEA full-scope safeguards. The states directly affected by the prohibition on production of fissile material are the five NPT nuclear weapons states, and, most significantly, the three *de facto*

nuclear weapons states outside the NPT—India, Israel, and Pakistan. Much of the political motivation of the treaty proposal is to bring these three states into alignment with the nonproliferation regime. In effect, the *de facto* nuclear weapons states would accept “capping” or “freezing” their fissile material production programs in return for “grandfathering” their past unsafeguarded stockpiles.

There are global and regional reasons for the renewed interest in a ban on the production of fissile material for weapons or unsafeguarded stockpiles. On the global level, the cutoff proposal transcends the present nonproliferation regime in three important respects. First, it extends the boundaries of the regime from prohibiting the weapons themselves, as the NPT does, to the most critical stage—production of fissile material—and it puts a ceiling on the amount of fissile material permitted to be held outside of safeguards. Second, it creates a non-discriminatory norm, modelled on the principles of the CWC and is consistent with the obligation of the nuclear weapons states under Article VI of the NPT to work for “the cessation of the nuclear arms race,” an important interim measure leading to a NWFZ. Third, such a treaty extends the boundaries of the global nonproliferation regime by including the three second-tier, *de facto*, nuclear weapons states that thus far have refused to sign the NPT, are not likely to do so in the future, and continue to conduct their nuclear activities outside international safeguards.

Though the idea of extending the nonproliferation regime through a cutoff treaty has an intuitive appeal, there are many complex political and

technical issues involved in negotiating such a treaty: precisely what should be declared, the scope of the verification procedures, compatibility with the NPT/IAEA safeguards system, and other questions. The 1995 NPT Extension Conference will likely affect the prospects for a cutoff treaty. In any case, realizing that negotiations for a formal global treaty are likely to be a long and difficult process, it has been suggested that such a treaty should be thought of as the end of a process that would begin with weaker arrangements concerning fissile material cutoff—informal, declaratory, non-intrusive, etc.—to be established on a regional, bilateral, or even unilateral basis.

This brings us to the next item on Clinton’s “comprehensive approach” to the problem of fissile material, “[to] encourage more restrictive regional arrangements to constrain fissile material production in regions of instability and high proliferation risk.”<sup>68</sup>

The United States considers the ban on production of fissile material to be a necessary step toward the establishment of a NWFZ in the Middle East. The Bush administration’s post-Gulf War initiative for Middle East Arms Control “call[ed] on regional states to implement a verifiable ban on production and acquisition of weapons-usable nuclear material (enriched uranium and separated plutonium).”<sup>69</sup> This was the first United States proposal that dealt with the nuclear reality in the Middle East, beyond the traditional U.S. pro-forma support of the NPT. In any case, the Bush initiative was no more than a loose set of ideas for possible future arms control arrangements in the Middle East, and the Bush administration

left the question of the fissile material cutoff in limbo, pending further progress on the peace front and within the newly-established ACRS forum. As the co-chair of the ACRS talks, the United States has been very careful not to raise the issue of fissile material cutoff prematurely.

Israel, of course, is the only Middle Eastern state directly affected by the global cutoff convention, which bears directly on Israel’s “nuclear option,” an issue rarely discussed in Israel. Under the proposed cutoff regime, Israel would for the first time accept safeguards for the sole purpose of verifying that no production of fissile material for weapons takes place, but such a regime would have no effect on its past nuclear activities. Past and present nuclear activities unrelated to production of fissile material would be outside the scope of the cutoff regime and remain unsafeguarded. The cutoff proposal would both “freeze” and grandfather Israel’s nuclear capability.

In line with its traditional stance, Israel has officially neither rejected nor endorsed the Clinton cutoff initiative—since there is still no global treaty, nor a concrete regional proposal, Israel has no need to commit itself to a formal position. Unofficially, however, Israeli senior officials told the United States that “Israel can live with the Clinton’s arms control proposal,”<sup>70</sup> and in November 1993, Israel quietly joined a non-binding consensus resolution on this matter at the First Committee of the United Nations.

According to the speculative but conservative calculations of the authors of the *World Inventory of Plutonium and Highly Enriched Uranium 1992*, by the end of 1991, Israel may have produced between 240

to 415 kilograms of plutonium. According to these authors, this is equivalent to a nuclear arsenal of 48 to 83 warheads.<sup>71</sup> By the end of 1995, Israel's stockpile of plutonium is similarly estimated to be somewhere between 275 and 475 kilograms, equivalent to an arsenal of 55 to 95 warheads.<sup>72</sup> Those estimated magnitudes of the Israeli stockpile of fissile material, even on the lower, conservative side, imply a robust "nuclear option." A cutoff commitment, *conducted under the right political and technical circumstances*, should not erode Israel's nuclear deterrent image, while providing leverage for stronger future regional arms control arrangements.

### CONCLUSION: ISRAEL, THE PEACE PROCESS, AND DENUCLEARIZATION

Over the years, Israel has insisted on minding its own nuclear business, quietly and opaquely. Friends learned to understand it, foes learned to live with it, and all attempts to meddle in Israel's nuclear affairs were resisted. The United States and Israel clashed occasionally in the 1960s, first on the question of inspection visits at Dimona and later on the issue of the NPT. Since around 1970, however, the two countries have had tacit understandings on the sensitive issue. When Anwar Sadat raised the topic of the NPT during the Camp David negotiations in 1978, he was rebuffed by both the United States and Israel; for the sake of bilateral peace he agreed to drop the issue.<sup>73</sup> Iraq was the only the Arab state that attempted to break the opaque Israeli nuclear monopoly; in 1981, Israel dealt a severe setback to the Iraqi effort.

Through a mixture of resolve and inhibition, clarity and ambiguity, luck and outside sympathy, Israel managed to shape and at times to impose, a unique regional nuclear regime to its own liking. The Israeli bomb became, in the words of *The Economist*, both "the world's worst kept secret"<sup>74</sup> and "the bomb that never is."<sup>75</sup>

Israel's nuclear opacity now appears to have been a successful national strategy for the period of the Arab-Israeli conflict, allowing Israel to balance on both horns of its nuclear dilemma without resolving its inherent tensions—maintaining a nuclear deterrent image while advocating nonproliferation through a NWFZ once peace arrived. But peace, when it comes, will force Israel to confront its nuclear dilemmas. Israel maintains that bilateral peace negotiations should drive all other multilateral discussions, especially regional arms control, not the reverse. This way of thinking was manifest in the language of the Israeli-Jordanian peace treaty, where the two parties took upon themselves the commitment:

to work, as a matter of priority and as soon as possible in the context of the ACRS towards the creation of a Middle East free from weapons of mass destruction, both conventional and non-conventional, in the context of comprehensive, lasting and stable peace, characterized by the renunciation of the use of force, reconciliation and good will.<sup>76</sup>

Israel has been working on peace issues in three parallel bilateral tracks: testing the political and security implications of the self-rule agreement it signed with the PLO with the intention of extending Palestinian self-rule to other areas in

the West Bank; solidifying the peace with Jordan; and, with American mediation, quietly negotiating with Syria. Until Syria is a full party to the ACRS, it is nearly certain that no substantial progress in the area of WMD can take place in that forum. The Syrians insist on joining the ACRS only after substantial progress is made in their negotiations with Israel, including matters of security and arms control. For both geo-strategic and domestic reasons, it is very unlikely that any Israeli government would be willing to move toward the establishment of a WMDFZ or NWFZ in the Middle East before concluding a bilateral peace treaty with Syria.

It would be only within the context of a comprehensive peace agreement with Syria, including a substantial package on mutual security and arms control, that Israel might agree to consider a nuclear component, perhaps in the form of a joint Syrian-Israeli declaration denouncing all weapons of mass destruction, which could be presented as a first step toward the establishment of a Middle East free of them. Whatever Israel might agree to say or do in the area of WMD and their delivery systems would have to be reciprocated by similar undertakings by Syria, as well as other means of demilitarization in the conventional field. Notwithstanding the strategic issues involved, it would be difficult domestically for any Israeli government to appear to make concessions on both the territorial and nuclear fronts.<sup>77</sup>

Another Israeli condition for negotiations at the ACRS on a regional WMDFZ or NWFZ is its insistence that both Iraq and Iran must be part of any regional nuclear regime. At the present time, these two states are

outside the ACRS, and they are unlikely to join soon. Without the active participation of these two states, the most advanced in the nuclear field after Israel, no tangible progress can be made on a NWFZ. However, such a position need not exclude theoretical-conceptual exploration within the ACRS of what a NWFZ treaty for the Middle East would look like. Given the time it took to establish the South American NWFZ and the additional complexity of the Middle Eastern situation, it might be useful to initiate such theoretical work in this area now, through a subordinate body of the ACRS. Any such negotiations are surely to be complex and lengthy. A NWFZ in the Middle East would require Israel to place its nuclear facilities under some form of international or regional safeguards. But Israel is not likely to relinquish its past knowledge and experience in this field. As a state born from the ashes of the Holocaust, Israel, unlike South Africa, intends to safeguard its nuclear experience and knowledge. It has invested too much, politically and financially, and for too many years, in building its ultimate insurance policy to let it lapse.

The NPT Extension Conference to be held in mid-1995 lends urgency to the need for Israel to reconsider its stance. Recently Egypt took advantage of the politics of the NPT to exert diplomatic pressure on Israel on the nuclear issue, presenting a draft resolution in early November 1994 at the U.N. that cited Israel as "the only state in the region with advanced unsafeguarded nuclear capabilities," and called upon it "not to develop, produce, test or otherwise acquire nuclear weapons and to renounce their posses-

sion and to accede to the Treaty on the Non-Proliferation of Nuclear Weapons."<sup>78</sup> While these diplomatic moves will be unlikely to affect Israel's policy on the NPT, they create a negative atmosphere for the NPT Extension Conference. If Israel shows some progress on the question of the NWFZ, this could counter Egyptian pressure on the question of the NPT. Notwithstanding the deficiencies of the NPT, its indefinite extension is clearly in the Israeli interest.

As for the fissile material cutoff treaty negotiations, while there may be certain attractive components for Israel in such a proposal, there may be risks as well. In the past, Israel has taken a cautious and passive approach on nuclear matters in the global arena, an attitude rooted in a culture that evolved around the nuclear issue for over 30 years, during which Israel fought hard to maintain total control and absolute secrecy over all its nuclear activities. Israel never placed its Dimona nuclear facility under IAEA safeguards, nor since 1970 has it allowed any other type of inspections at that site. Notwithstanding the legacy of the past, on the question of the cutoff treaty Israel now has strong reasons to consider changing its old policy. Since the cutoff treaty may be vital to the future of Israeli nuclear activities, it must be active in negotiating its details.

Even if Israel can live with the most essential undertakings of the cutoff treaty proposal, and it appears that it can, it will be very hesitant about making declarations and placing its Dimona facility under international safeguards arrangements. Some of its hesitation may be due to concern that the formal verification system of the cutoff treaty could

reveal more than expected. For example, would Israel agree to a verification system built on the CWC principle of "managed access," which would allow inspection of the entire Dimona facility and/or other sensitive sites? Negotiating formal agreements requires a degree of transparency beyond the minimum required to verify nonproduction.

Some of the Israeli concerns may be grounded in a general anxiety about other implications of such an arrangement for Israel's freedom of action in this area—the "slippery slope" argument. Israel would almost certainly insist on reaching private high-level understandings with the United States on the language of the treaty, to insure itself against further pressures later; it might also condition its support of such a treaty by forming other long-term understandings with the United States, including in the area of counter-proliferation.

Another mode of action for Israel on this matter could be along the informal path of a unilateral national undertaking, possibly by a declaration, but with no immediate adherence to the treaty. For example, at an appropriate political moment Israel could declare the Dimona reactor to be shut down, and invite verification through non-intrusive measures. All these contingencies depend, of course, on specific circumstances. At the end, Israel's response to the cutoff proposal may be determined more in the context of an Israeli-American rather than an Arab-Israeli relationship.

Much of this discussion, however, remains only theoretical. As of January 1995 no party in the region has shown an interest in pursuing the cutoff proposal, nor has the Clinton administration shown any

great desire to move beyond the declaratory statements made thus far. The international consultations on a multilateral cutoff convention are still at an early stage, and no forum for formal negotiations has yet been established within the CD. The United States has also left matters of regional arms control to the ACRS, tacitly agreeing with Israel that an attempt to deal with the nuclear issue now would serve no useful purpose, but only fuel further tensions and disagreements. Though the United States has by no means abandoned its interest in the cutoff idea for the Middle East, at this point it has tested it—thus far unsuccessfully—in the somewhat easier context of the Indian subcontinent, presumably in the belief that if the cutoff idea is workable there, it will be more difficult for Israel to reject it outright.<sup>79</sup>

If any interim nuclear arrangement is possible for the Middle East, the cutoff proposal seems the most likely. It embraces the two most important features of Israel's nuclear opacity: it is a future-oriented bargain, which explicitly ignores the past while implicitly acknowledging its reality; and it makes no generic or specific reference to nuclear weapons as such, only banning fissile material for weapons.

In the past, nuclear opacity in the Middle East has been a substitute for discussion and negotiation, but it need not be that way in the future. Just as opacity may have helped to create constructive ambiguity in the past, it could also contribute to creating constructive ambiguities for future arms control.

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<sup>2</sup> For the Arab perception of the Israeli-Jordanian declaration, see Youssef M. Ibrahim, "War-Weary, Arabs in Consensus on Giving Israeli Peace a Chance," *The New York Times*, July 24, 1994, pp. 1, 12.

<sup>3</sup> R. Jeffrey Smith, "N. Korea, U.S. Reach Nuclear Pact," *The Washington Post*, October 18, 1994; Alan Riding, "U.S. and North Korea Agree to Build on Nuclear Accord," *The New York Times*, October 18, 1994.

<sup>4</sup> Avner Cohen and Marvin Miller, "Nuclear Shadows in the Middle East," *Security Studies* 1, (Fall 1991), pp. 54-77.

<sup>5</sup> The most recent IAEA on-site inspection in Iraq under Security Council Resolution 687 (1991) took place between October 14 and 21, 1994.

<sup>6</sup> Paul Lewis, "U.N.'s Team in Iraq Sees Arms Gains," *The New York Times*, July 26, 1994, p. A3.

<sup>7</sup> "Adherence to and Compliance with Arms Control Agreements," report by the Arms Control and Disarmament Agency to the U.S. Senate Foreign Relations Committee, June 24, 1994.

<sup>8</sup> On the general plan for long-term monitoring of Iraq see Tim Trevan, "Ongoing Monitoring and Verification in Iraq," *Arms Control Today* 24 (May 1994), pp. 11-15; IAEA Action Team for Iraq, Fact Sheet, 22 June 1993. Also, for an updated bibliography on the Iraqi nuclear issue see *Programme for Promoting Nuclear Non-Proliferation Newsbrief*, No. 24 (4th Quarter 1993), pp. 17-19.

<sup>9</sup> IAEA Action Team for Iraq, Fact Sheet, 22 June 1993, p. 2.

<sup>10</sup> On the proliferation dangers due to the situation in Russia see the testimonies of R. James Woolsey, the Director of the CIA, Dr. Thomas Cochran, and Leonard Spector before the House Committee on Foreign Affairs, Subcommittee on International Organization, International Security and Human Rights, June 27, 1994.

<sup>11</sup> Letter from William Studeman, Deputy Director CIA to Senator John Glenn, August 27, 1993, included in U.S. Congress, Senate, Committee on Governmental Affairs, Hearings on "Proliferation threats for the 1990s," S. Hrg. 103-208, February 24, 1993, p. 132.

<sup>12</sup> *Ibid.*

<sup>13</sup> The Bushehr nuclear power project, started by the Shah and badly damaged during the Iran-Iraq war was later completed by the Russians. China, as part of its 1990 10-year nuclear cooperation pact with Iran, provides Iran with two big research reactors and other nuclear technology and expertise; Iranian scientists and engineers are trained in nuclear research centers in Russia, China, and Pakistan. "Russia Signs Deal for Iranian Nuclear Plant," *Reuter*, January 8, 1995; see also "Russia to Help Set Up Nuclear Plant in Bushehr," FBIS-NES-94-072, April 14, 1994; Cf. FBIS-NES-94-079, April 25, 1994. For a good compilation of Iran's nuclear efforts see Betsy Perabo, "A Chronology of Iran's Nuclear Program," *Eye on Supply*, No. 7 (Monterey Institute of International Studies, Emerging Nuclear Suppliers Project, Fall 1992), pp. 45-71; see also William E. Burrows and Robert Windrem, *Critical Mass* (New York: Simon and Schuster, 1994), pp. 341-43, 537.

<sup>14</sup> Jeffrey Smith, "U.S. Worry: Nuclear Aid by Beijing to Teheran," *International Herald Tribune*, October 31, 1991; Jim Mann, "U.S. Suspects China Aids Iran on Arms," *International Herald Tribune*, March 18, 1992.

<sup>15</sup> Burrows and Windrem, *op. cit.*, p. 343.

<sup>16</sup> For an updated compilation of these issues see *Programme for Promoting Nuclear Non-Proliferation Newsbrief*, No. 24 (4th Quarter 1993), p. 17; David Albright and Mark Hibbs, "Spotlight Shifts to Iran," *Bulletin of the Atomic Scientists*, March 1992, pp. 9-11; Burrows and Windrem, *op. cit.*, pp. 336-68.

<sup>17</sup> R. Jeffrey Smith, "North Korea Pact Contains U.S. Concessions," *The Washington Post*, October 19, 1994; David A. Sanger, "Clinton Approves a Plan To Give Aid To North Koreans," *The New York Times*, October 19, 1994., pp. A1, A14.

<sup>18</sup> In addition to the declared activities of the Iranian Atomic Energy Organization, there are media reports about secret nuclear facilities in Iran by both the Revolutionary Guards and the Iranian army. For example, there are rumors that Iran may be developing gas centrifuges for uranium enrichment at several secret locations in northern Iran and there are repeated unconfirmed stories about Iranian efforts to purchase nuclear weapons or fissile material from sources within the former Soviet Union. See Burrows and Windrem, *op. cit.*, pp. 338-48.

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.* However, there is an open question of just how much economically depressed and politically divided Iran is really able to threaten its neighbors and execute assertive foreign policy. See Geoffrey Kemp, *Forever Enemies: American Policy and the Islamic Republic of Iran* (Washington, D.C.: The Carnegie Endowment, 1994), especially pp. 27-32. See also Elaine Sciolino, "Iran's Difficulties Lead Some in U.S. to Doubt Threat," *The New York Times*, July 5, 1994.

<sup>21</sup> Shahram Chubin, *Iran's National Security Policy: Capabilities, Intentions and Impact* (Washington, D.C.: The Carnegie Endowment for International Peace, 1994), p. 53.

<sup>1</sup> The author is grateful to a number of friends and colleagues who read earlier versions of this paper and volunteered their insights and com-



<sup>22</sup> For a list of Iranian incentives to go nuclear see Chubin, *op. cit.*, p. 54.

<sup>23</sup> Douglas Jehl, "Iran Is Reported Acquiring Missiles," *The New York Times*, April 8, 1993; Knut Race, "Iran Buying 150 'Terror Missiles,'" *Long Island Newsday*, April 11, 1992; Christopher Walker, "Iran Submarine Purchase Tilts Gulf Power," *The London Times*, October 5, 1992. See also Burrows and Windrem, *op. cit.*, pp. 338-343; Chubin, *op. cit.*, pp. 46-55; Anthony Cordesman, *Weapons of Mass Destruction* (Washington: Brassey's, 1991), pp. 82-84.

<sup>24</sup> Chubin, *op. cit.*, p. 52.

<sup>25</sup> As an example of this ambiguity, Chubin cites a 1990 meeting between President Rafsanjani and Hans Blix, the Director-General of the IAEA, in which the former was reported as saying that as long as one state was armed with nuclear weapons, control was impossible. Rafsanjani also made the point that whenever the vital interests of states are threatened, they would not obey "international regulations." Chubin, *op. cit.*, p. 52, ff. 68.

<sup>26</sup> Chubin cites both the Iranian vice president and the Speaker of the Assembly of Experts as making comments to that effect. *Ibid.*, pp. 52, 101.

<sup>27</sup> Chubin, *op. cit.*, p. 51.

<sup>28</sup> Michael R. Gordon, "Iraq Played 'Catch Me if You Can'; North Korea Says, 'What if You Do?'," *The New York Times*, June 5, 1994, Section 4, p. 1.

<sup>29</sup> Elaine Sciolino, "Iraq's Nuclear Program Shows the Holes in U.S. Intelligence," *The New York Times*, October 20, 1991; Paul Lewis, "U.N. Aides Discover Atom Arms Center Concealed by Iraq," *The New York Times*, October 8, 1991; Eric Schmitt, "U.S. Says It Missed 2 A-Plants in Iraq," *The New York Times*, October 11, 1991.

<sup>30</sup> Chris Hedges, "Iran May Be Able to Build an Atomic Bomb in 5 Years, U.S. and Israeli Officials Fear," *The New York Times*, January 5, 1995, p. A10. In a joint press conference on January 8 in Jerusalem, Israeli Prime Minister Rabin and U.S. Secretary of Defense Perry agreed that Iran could build a bomb within "seven to fifteen years." Clyde Haberman, "Israel Eyes Iran in the Fog of Nuclear Politics," *The New York Times*, January 15, 1995, p. E5. See also the testimony of the James Woolsey, the Director of the CIA, before the House Foreign Affairs Committee, Subcommittee on National Security, July 28, 1993.

<sup>31</sup> It appears plausible that Iran has not even made a strategic decision on whether to focus on the enrichment or the plutonium route.

<sup>32</sup> The agreed framework means freezing and then rolling-back the DPRK nuclear program. It places the DPRK back within the NPT/IAEA safeguard regime. The United States showed its determination to deny North Korean proliferation. But the framework does not allow "special inspection" for a period of five years, and it awards a violator of the NPT with economic incentives.

<sup>33</sup> On the possible involvement of Iran in terrorist acts against Jewish targets in Argentina and the United Kingdom, the latter coinciding with the Israeli-Jordanian declaration, see Tim Weiner,

"Iran and Allies Are Suspected in Bomb Wave," *The New York Times*, July 29, 1994; also Ron Ben-Ishai, "The Iranian Explosive Hand," *Ye'diot Ahronot*, July 29, 1994.

<sup>34</sup> Chubin, *op. cit.*, especially pp. 10-16.

<sup>35</sup> On the concept of nuclear opacity and its application to the Israeli case see Avner Cohen, "Patterns of nuclear opacity in the Middle East," in Tariq Rauf, ed., *Aurora Papers 16* (Ottawa: Canadian Center for Global Security, 1986); pp. 13-54; Avner Cohen and Benjamin Frankel, "Opaque Nuclear Proliferation," in Benjamin Frankel, ed., *Opaque Nuclear Proliferation* (London: Frank Cass, 1991), pp. 14-44; Avner Cohen and Marvin Miller, "Facing the Unavoidable: Israel's Nuclear Monopoly Revisited," in Frankel, *op. cit.*, pp. 64-76; Yair Evron, "Opaque Proliferation: the Israeli Case," in Frankel, *op. cit.*, 45-63.

<sup>36</sup> For discussions of Israel's nuclear history see Seymour M. Hersh, *The Samson Option: Israel's Nuclear Arsenal and American Foreign Policy* (New York: Random House, 1991); Shlomo Aronson with Oded Brosh, *The Politics and Strategy of Nuclear Weapons in the Middle East* (Albany: State University of New York Press, 1992); Leonard S. Spector, *Nuclear Ambitions* (Boulder: Westview Press, 1990), pp. 149-74; Frank Barnaby, *The Invisible Bomb* (London: I. B. Tauris, 1989); Yair Evron, *Israel's Nuclear Dilemma* (Hebrew; Tel Aviv: Hakibbutz Hameuchad, 1987), pp. 13-21; Peter Pry, "Israel's Nuclear Arsenal," (London: Croom Helm, 1984); Fuad Jabber, *Israel and Nuclear Weapons: Present Options and Nuclear Strategies* (London: Chatto and Windus, 1971).

<sup>37</sup> It is commonly accepted that Israel has a sizeable nuclear weapons arsenal, speculated to be anywhere from 50 to 300 bombs. David Albright, Frans Berkhout, and William Walker, *World Inventory of Plutonium and Highly Enriched Uranium 1992* (New York: SIPRI and Oxford University Press, 1993), pp. 155-57. For the sake of conceptual brevity, and without getting into too much speculation, it is sufficient for us to presume that Israel has full control over both stockpiles of fissile material and nuclear weapons know-how. The first was confirmed in great detail by the Vanunu revelations (London *Sunday Times*, October 5, 1986, pp. 1, 4-5), the second was publicly confirmed as early as October 1968 by Israel's late Prime Minister Levi Eshkol (*The New York Times*, October 5, 1968, p. 3).

<sup>38</sup> Hedrick Smith, "U.S. Assumes the Israelis Have A-Bomb or Its Parts," *The New York Times*, July 18, 1970, pp. 1, 8.

<sup>39</sup> Ezer Weizman, the present President of Israel and the Defense Minister during the peace negotiations with Egypt, repeatedly made the remark that on his first night in Israel President Sadat invoked Israel's nuclear capability as one of the primary reasons for his decision to make peace with Israel. Ezer Weizman, *The War Over Peace* (Hebrew; Tel Aviv: Edanim, 1981), pp. 85-87. Mr. Weizman made this point in many conversations with the author, and Mr. Mustafa Halil, the Prime Minister of Egypt under Sadat, confirmed it in conversation with the author, Cairo, June

1990.

<sup>40</sup> There are many tacit indications that the perception of Israel as a full nuclear power helped to convince the Palestinians that they must make a deal with Israel on terms much less favorable than they had hoped; this recognition was at the background of the historical recognition between Israel and the PLO that was struck through the Oslo agreement. I received this impression from many interviews and personal communications with Arab, and especially Palestinian, strategists during the last few years, and discussed it in my "Did Nukes Nudge the PLO?" *The Bulletin of Atomic Scientists*, December 1993, pp. 11-13.

<sup>41</sup> See Peter Waldman, "Egypt Confronts Israel on Nuclear Arms," *The Wall Street Journal*, January 11, 1995, p. A10; Samia Nakhoul, "Eight Arab States Coordinate on Nuclear Treaty," *Reuter*, February 6, 1995; Samia Nakhoul, "Egypt, Israel Set Up Talks to Patch Ties," *Reuter*, January 31, 1995; Ray Brahimi, "Arabs Resist Indefinite NPT Extension," *UPI*, January 26, 1995; Thomas W. Lippman, "Nonproliferation Pact Raising Tension Between U.S. and Egypt," *The Washington Post*, January 26, 1995; for an Israeli commentary on this impasse, see Ze'ev Schiff, "Fortified Nuclear Wall," *Ha'aretz*, January 27, 1995 (all cites from Nuclear Nonproliferation Network).

<sup>42</sup> Yitzhak Rabin, "Only the US Can Prevent Proliferation," *Davar* (in Hebrew), January 17, 1992; Ze'ev Schiff, "Race Against Time," *Politika*, No. 44 (March 1992), pp. 14-17.

<sup>43</sup> This was very apparent in Rabin's inaugural address to the Knesset on July 13, 1992, when he stated: "Already in its initial stages, the Government, possibly with the cooperation of other countries, will give its attention to the foiling of every possibility that any of Israel's enemies would get hold of nuclear weapons." See also his article, "Taking Advantage of the Time-Out," *Politika*, No. 44 (March 1992), pp. 28-29.

<sup>44</sup> For a brief history of this resolution see the U.N. Report to the Secretary General, *Establishment of a Nuclear Weapon-Free Zone in the Region of the Middle East*, A/45/435, 10 October, 1990, especially pp. 6-7. For a detailed Egypt-oriented history see Mahmoud Karem, *A Nuclear Weapon-Free-Zone in the Middle East: Problems and Prospects* (Westport: Greenwood Press, 1988), pp. 91-117.

<sup>45</sup> "Establishment of a Nuclear-Weapon-Free-Zone in the Region of the Middle East Israel: Draft Resolution," U.N. General Assembly, Thirty-fifth session, First Committee, Agenda item no. 38, October 31, 1980.

<sup>46</sup> Mr. Shalheveth Freier, the former director-general of the Israeli Atomic Energy Commission and subsequently a member of the Israeli delegation to the First Committee, is one of the Israelis who articulated this vision. For his most recent statement, see Shalheveth Freier, "A Nuclear-Weapons-Free-Zone in the Middle East and its Ambience," *The Weizmann Institute, Rehovot* (unpublished paper), 1993.

<sup>47</sup> On this impasse see U.N. Study A/45/435, pp. 23-25.

<sup>48</sup> See the U.N. Report, *Establishment of a*

*Nuclear-Weapons-Free Zone in the Region of the Middle East*, A/45/435, 10 October, 1990, pp. 23-25.

<sup>49</sup> On the importance of democratization see Jose Goldemberg and Harold A. Feiveson, "Denuclearization in Argentina and Brazil," *Arms Control Today* 24 (March 1994), pp. 10-14.

<sup>50</sup> In addition to the Latin American model of a NWFZ there is also a NWFZ in the South Pacific, established through the framework of the Treaty of Rarotonga (1985). This treaty covers no continent and is even less relevant to the problems of the Middle East.

<sup>51</sup> As early as 1985, the civil governments in both Argentina and Brazil reversed longstanding policies of nuclear secrecy, which for years had fueled international suspicions that both countries might be developing nuclear weapons programs, and transformed their nuclear rivalry into cooperation, establishing a Joint Committee on Nuclear Policy that provided a permanent binational forum to consult on nuclear research (breeder reactors), safety, and safeguard procedures. A year later, when the two nations signed a major trade pact, nuclear cooperation was integrated into the broader agenda of economic cooperation. Another measure of confidence-building was established through visits by the two heads of state to the other country's most sensitive nuclear facilities. By the late 1980s, while both countries still sustained their long-held opposition to the NPT, they also agreed that it would be to their own economic benefit to accept the norms of a nonproliferation regime, including full-scope IAEA safeguards. In 1990-91, additional nuclear confidence-building measures were established between Argentina and Brazil that ultimately led the way to the full implementation of a NWFZ in Latin America. In November 1990, the presidents of both countries signed a "Declaration on the Common Nuclear Policy of Brazil and Argentina" announcing the establishment of a binational Common Accounting and Control System to verify that nuclear materials in all nuclear activities of both countries are used exclusively for peaceful purposes, to state their intent to use this accounting system as the basis for negotiations with the IAEA on full-scope safeguards agreements, and to express their desire that these measures would bring the Treaty of Tlatelolco into force. In July 1991, the two nations established a joint agency, the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC), with the responsibility to implement the new system. A year later, the ABACC was inaugurated, with its headquarters in Rio de Janeiro. For updated accounts of the Latin American nuclear situation see John R. Redick, "Latin America's Emerging Non-Proliferation Consensus," *Arms Control Today* 24 (March 1994), pp. 3-9, 5-7; John R. Redick, "Argentina-Brazil Nuclear Non-Proliferation Initiatives," *Programme for Promoting Nuclear Non-Proliferation*, Review Issue, No. 3 (January 1994). Also Goldemberg and Feiveson, *ibid.* (For the text of the Argentinian-Brazilian "Declaration on the Common Nuclear Policy," see *Arms Control Today* 24 (March 1994), p. 11.) The

presidents of Argentina and Brazil in February 1992 proposed a series of amendments to the Treaty of Tlatelolco that paved the way for their nations' full adherence to the NWFZ concept. The main purpose of these amendments was to change the verification procedures of the treaty as applied to these two countries, transferring the inspection responsibility from the organization established by the treaty itself OPANAL to the structure agreed upon in the Quadripartite Agreement. On January 18, 1994 Argentina and Chile ratified the amended treaty and put it into force in their territories, and on May 30 the Brazilian Senate followed suit. Twenty-seven years after the Treaty of Tlatelolco was signed, its vision of a NWFZ for the entire Latin American continent had come into being, with the sole exception being Cuba.

<sup>52</sup> In a recent study by the IAEA (*Technical Study on Different Modalities of Application of Safeguards in the Middle East*, IAEA-GC (XXXIII)/887, 29 August 1989) the region of the Middle East was defined as "the area extending from the Libyan Arab Jamahiriya in the West to the Islamic Republic of Iran in the East, and from Syria in the North to the People's Democratic Republic of Yemen in the South." While this definition includes the core states involved in both the Arab-Israeli and the Iranian-Iraqi conflicts, it excludes the Maghreb Arab states Tunisia, Algeria and Morocco as well as the Sudan, Somalia and Mauritania. All these states are members of the League of Arab States (LAS), and as such they were a formal side in the Arab-Israeli conflict. Algeria's significance to a NWFZ in the Middle East goes beyond its LAS membership; Algeria is not a party to the NPT and it is building a relatively large research reactor with assistance from China. While Pakistan and India are not expected to be full participants in a NWFZ in the Middle East, both states are expected to accept certain formal obligations (such as not to transfer, assist, or deploy nuclear weapons in the region) in a protocol to such a treaty.

<sup>53</sup> This Egyptian stance was strongly expressed by the Egyptian Foreign Minister Amre Mussa in his visit to Israel in early September. Mussa urged Israel to sign the NPT and dismantle its nuclear capability. He also suggested that Egypt would not sign the CWC if Israel remains outside the NPT. *Ha'aretz*, August 31 and September 1, 1994.

<sup>54</sup> Private communications with Egyptian specialists, mostly senior diplomats and academics, in various meetings during the last two years. On this issue see also Shai Feldman, "Israel," in Mitchell Reiss and Robert S. Litwak, eds., *Nuclear Proliferation After the Cold War* (Washington, D.C.: The Woodrow Wilson Center Press, 1994), pp. 80-82; Ze'ev Schiff, "What Are The Arabs Afraid Of," *Ha'aretz*, June 26, 1991.

<sup>55</sup> This kind of posturing was already evident during the first two rounds of the bilateral talks on arms control in Moscow in January 1992 and in the Washington "seminar" in May 1992. See Ruth Sinai, "Mideast Arms Talks," Associated Press, May 11, 1992.

<sup>56</sup> Aluf Ben, "When Lasting Peace Comes,"

*Ha'aretz*, September 29, 1993, p. B5.

<sup>57</sup> Israel presented its "visionary goals" for the arms control agenda in a speech by Foreign Minister Shimon Peres, on the occasion of signing the CWC. The text was released in a statement by the Foreign Ministry, Jerusalem, January 14, 1993.

<sup>58</sup> Steven Greenhouse, "Israelis Offering to Leave Golan, Negotiators Say," *The New York Times*, May 18, 1994.

<sup>59</sup> Bill Keller, "South Africa Says It Built 6 Atom Bombs," *The New York Times*, March 25, 1993.

<sup>60</sup> For the most detailed official account of the history of the South African nuclear project see Waldo Stumpf (the chief executive office of the state-controlled Atomic Energy Corporation), "South Africa's Nuclear Weapons Programme" (mimeograph), paper presented at a conference in New Delhi, India, November 1993. Also see David Albright, "South Africa and the Affordable Bomb," *Bulletin of the Atomic Scientists*, (July/August 1994), pp. 37-47; R. Jeffrey Smith, "South Africa's 16-Year Secret: The Nuclear Bomb," *The Washington Post*, May 12, 1993; J. W. de Villiers, Roger Jardine and Mitchell Reiss, "Why South Africa Gave Up the Bomb," *Foreign Affairs* 72, No. 5, (1993), pp. 2-13.

<sup>61</sup> Stumpf, *loc. cit.*, pp. 14-15.

<sup>62</sup> It is generally presumed that by acceding to the NPT as a non-weapon state South Africa relinquished not only the physical aspects of its nuclear weapons program but also the knowledge/experience it had acquired while manufacturing nuclear weapons. The presumption is derived primarily from Article II of the NPT, which formulates the fundamental obligation of the non-nuclear weapon states as "not to manufacture...nuclear weapons or other nuclear explosive devices"; retaining such knowledge is presumably an intrinsic aspect of manufacture. However, under analysis the exact operational meaning of the obligation under Article II is less clear, because the NPT contains no definition of the key phrases "manufacture" or "nuclear explosive device."

Even if we interpret the term "manufacture" broadly, as the negotiating record of the NPT suggests (the so called "Foster criteria"), to mean *all* actions that entail the *intention* to make nuclear weapons, it still remains unclear what kind, if any, of nuclear weapons-related research is prohibited. According to Bunn and Timerbaev, during the negotiations on the NPT the United States gave its own criteria for defining "manufacture" to potential signatories who asked for clarification. In his testimony before Congress, William C. Foster, the U.S. chief negotiator, characterized the criteria, developed in consultations with the Soviet Union and Sweden, as the following: "[F]acts indicating that the *purpose* of a particular activity was the acquisition of a nuclear explosive device would tend to show non-compliance. (Thus the construction of an *experimental* or prototype nuclear explosive device would be covered by the term "manufacture" as would be the *production of components which could only have relevance to a nuclear explosive device*). Again, while the *placing of a particular activity*

under safeguards would not, in and of itself, settle the question of whether the activity was in compliance with the treaty, it would be helpful in allaying any suspicion of non-compliance." [*Ibid.*, p. 5] The Foster criteria, the authors stress, put the prohibition on manufacture in terms of activities much earlier than just "the final assembly of an explosive device," as Sweden suggested. Nevertheless, it did not list what those activities are but rather defined them by their purpose. The problem is that, except for the reference to manufacture or acquisition of nuclear explosives, nowhere in the NPT is there an explicit effort to draw the line between legitimate and illegitimate nuclear research activities; nor is there an attempt to draw the line between *theoretical research* and *applied development*. Nothing in the NPT prohibits the scientists of a non-weapon state from conducting theoretical research on, for example, the hydrodynamics of the implosion mechanism, as long as they maintain that the purpose of this research is peaceful and can show a possible peacetime use. The stress of the prohibition in Article II is, however, clearly on production, not on R&D. The question of nuclear weapons knowledge/experience *per se* was hardly dealt with by the framers of the NPT. To the extent that they recognized the problem, they circumvented it by imposing a broad (but vague) prohibition on all activities directed at manufacturing or acquiring nuclear weapons.

These ambiguities and omissions are manifested more clearly in Article III of the NPT, which sets up the terms to verify compliance with Article II. It requires non-weapon signatory states to conclude a full-scope safeguard agreement with the IAEA, "with a view to preventing diversion of nuclear energy from peaceful uses to nuclear weapons." Notably, the IAEA full-scope safeguard mechanism—the verification mechanism of the NPT—is much more limited in its objectives than the broad terms of the prohibition. While Article II (according to the Foster criteria) prohibits any activity intended to manufacture nuclear weapons, Article III provides a safeguards system whose mandate is limited to "all source or special fissionable material in all peaceful nuclear activities within the territory of such State." In fact, neither uranium enrichment nor the stockpiling of separated plutonium, nor research associated with these activities all of which could be used in the manufacture of nuclear weapons would violate Article II, *as long as those activities are declared and under safeguards*. The IAEA/NPT model of full-scope safeguard (INFCIRC 153) deals essentially with nuclear *materials* and *facilities*: the prime focus of IAEA inspections. While INFCIRC/153 allows for conducting "special inspections" directed at other suspect activities related to the manufacture of nuclear weapons, in reality the IAEA safeguards system imposes no practical limitations on activities that fall under R&D that do not involve nuclear materials, or locations where nuclear materials are not customarily present.

These ambiguities are not surprising, nor are the omissions accidental. The framers of the NPT recognized that knowledge/experience cannot be

subjected to effective international control and safeguards like a physical commodity, and international control of nuclear-related research cannot be effectively enforced without severe infringement of the principles of scientific freedom and national sovereignty as they are understood today. A case in point is Iraq, where major infringements on its national sovereignty are imposed under the current inspection and monitoring regime, but it is still practically impossible to verify that no nuclear weapons research takes place in the country, let alone to force it to relinquish its past knowledge/experience. The IAEA system of declarations and inspections was designed to reveal diversion of nuclear material from civilian uses to the manufacture of nuclear explosives, which was the major concern at the time the NPT was negotiated. During the NPT negotiations in the mid-1960s a number of technologically advanced states, in particular Sweden and Switzerland (and, to a degree, Germany), conditioned their support of the NPT on keeping some ambiguities concerning theoretical nuclear weapons research. Both Sweden and Switzerland had at that time small, secret nuclear weapons research programs; clearly they wanted to keep their research options open in this area. The idea of dismantling a nuclear weapons program can thus be seen to be extremely complex.

<sup>63</sup> On the other hand, with stewardship of past knowledge/experience alone it is increasingly difficult to retain a nuclear option for the long-run. Without an active R&D infrastructure, and a clear sense of mission, it is difficult to retain good scientists who over time will lose interest, go elsewhere, retire and eventually die, as was pointed out to me by my colleague Dr. Marvin Miller. See also Marvin Miller and Jack Ruina, "The Breakout Problem," in Joseph Rotblat, *et al.*, eds., *A Nuclear-Weapon-Free World* (Boulder: Westview Press, 1993), pp. 83-102.

<sup>64</sup> This is also the general approach of the 1990 U.N. Report, A/45/435, pp. 30-47.

<sup>65</sup> The White House, Office of the Press Secretary, Fact Sheet, September 27, 1993. Among the other related U.S. objectives cited in Clinton's "comprehensive approach" are:

- to seek to eliminate where possible the accumulation of stockpiles of highly enriched uranium or plutonium, and to ensure that where these materials already exist they are subject to the highest standards of safety, security and international accountability.

- to encourage more restrictive regional arrangements to constrain fissile material production in regions of instability and high proliferation risk.

- to submit U.S. fissile material no longer needed for our deterrent to inspection by the IAEA.

- to explore means to limit the stockpiling of plutonium from civil nuclear programs, and seek to minimize the civil use of highly enriched uranium.

<sup>66</sup> For early discussion of the idea of a cutoff treaty see Frans Berkhout, Oleg Bukharin, Harold Fivelson, and Marvin Miller, "A Cutoff

in the Production of Fissile Material," *International Security* 19 (Winter 1994/95), pp. 167-202; Lewis A. Dunn and Joseph A. Yager, "Limiting the Production and Use of Plutonium and Highly Enriched Uranium: A Definition of the Issues," SAIC paper, Arlington, VA, February 2, 1994; David Fischer, "Some Aspects of a Cutoff Convention," in *Halting the Production of Fissile Materials for Nuclear Weapons*, UNIDIR Research Paper No. 31 (Geneva: United Nations, 1994), pp. 25-46.

<sup>67</sup> Berkhout, *et al.*, *loc.cit.*, p. 4.

<sup>68</sup> The White House, Office of the Press Secretary, Fact Sheet, September 27, 1993.

<sup>69</sup> White House Fact Sheet on the Middle East Arms Control Initiative, May 29, 1991. See Avner Cohen and Marvin Miller, "Defusing the Nuclear Mideast," *The New York Times*, May 30, 1991.

<sup>70</sup> Aluf Ben, "Senior Governmental Aides: Israel Can Live with the Clinton's Arms Control Initiative," *Ha'aretz*, October 5, 1993, p. A2.

<sup>71</sup> David Albright, Frans Berkhout and William Walker, *World Inventory of Plutonium and Highly Enriched Uranium 1992* (New York: SIPRI and Oxford University Press, 1993), 157. The working assumptions of these authors, based on Pean, Vanunu and other anonymous U.S. sources, is that the power of the Dimona reactor is somewhere between 40 and 70 MW. Also, their estimates have not been reduced to account for tritium production, "which in any case is assumed to be small." p. 157.

<sup>72</sup> *Ibid.*

<sup>73</sup> For the text of Egyptian draft proposal, including its nuclear component, see William Quandt, *Camp David: Peacemaking and Politics* (Washington, D.C.: The Brookings Institution, 1986), pp. 356-360.

<sup>74</sup> "The World's Worst-Kept Secret," *The Economist*, October 26, 1991.

<sup>75</sup> "The Bomb That Never Is," *The Economist*, October 19, 1991, pp. 45-46.

<sup>76</sup> The Israel-Jordan Peace Treaty, Article 4, 7, b. The English text appeared in *The New York Times*, October 27, 1994, p. A8.

<sup>77</sup> Israel may feel less secure in the immediate period after it trades land for peace, and some will argue that a nuclear deterrent is the ultimate guarantee of a smaller Israel.

<sup>78</sup> Egypt Permanent Mission to the United Nations, "The Threat of Nuclear Armament in the Middle East," Agenda item 65, October 30, 1994. Also Shlomo Shamir, "Egypt Submitted to the UN a Resolution Denouncing Israel's Nuclear Weapons," *Ha'aretz*, November 2, 1994, p. A1.

<sup>79</sup> See John F. Burns, "India Resists Plan to Curb Nuclear Arms," *The New York Times*, May 15, 1994, p. 19A.