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The Armageddon Scenario: Israel and the Threat of Nuclear Terrorism

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The Armageddon Scenario: Israel and the Threat of Nuclear Terrorism

Chuck Freilich*

I do not belong to those who think that if Iran has a nuclear weapon it will hurry to drop it on a neighbor. Iran well understands that an act of this sort would set her back thousands of years. The primary danger is that a nuclear weapon will reach a terrorist group which will not hesitate to use it immediately. They will send it in a container with a GPS to a leading port in the US, Europe, or Israel.

Israel Defense Minister Ehud Barak, December 2008¹

There is no graver danger to global security than the threat of nuclear terrorism and no more immediate task for the international community than to address that threat.

US President Barack Obama, June 16, 2009²

INTRODUCTION

For the past 15 years, Israel's focus on the Iranian nuclear program has been nearly all-encompassing, eclipsing virtually all other threats. A nuclear Iran would undoubtedly pose a severe threat to Israel, indeed, possibly even an existential one. The preoccupation with Iran, however, may have distracted Israel from another threat, one which may be no less likely and actually far more difficult to counter; nuclear terrorism.

Experts and policymakers are divided on the probability of nuclear terrorism, much as they are on the likelihood of Iran using nuclear weapons, should it succeed in attaining them. On one issue, however, they are in agreement; the threat of nuclear terrorism is not just a mirage. The risk is real, and cannot be discounted or wished away.

The following study focuses on the threat of nuclear terrorism facing Israel. It begins with an overview of the nature of the threat, before

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turning to the potential perpetrators of nuclear terrorism against Israel, possible delivery mechanisms and targets, and the specific scenarios under which the threat to Israel might materialize. The study then presents possible policy options for Israel to deal with the threat, both unilaterally and in conjunction with the United States.

CHAPTER 1: THE THREAT OF NUCLEAR TERRORISM

According to reports since 2003, the threat of nuclear terrorism is growing. For example, the 2003 US National Strategy for Combating Terrorism warned that the risk of nuclear terrorism has increased significantly and that it posed one of the greatest threats to the national security of the US and its allies. The 2006 report stressed that weapons of mass destruction (WMD) terrorism poses one of the gravest threats. The 2008 report of the Congressionally appointed Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism warned that the danger of nuclear terrorism is growing and, in the absence of urgent and decisive international action, that nuclear or biological terrorism is likely to occur somewhere in the world by the end of 2013.

Presidents George Bush and Barack Obama have both termed nuclear terrorism the greatest threat facing the United States. Indeed, President Obama will even convene a global summit focusing on the threat of nuclear terrorism in April 2010. The Director of National Intelligence, John Michael McConnell, testified before Congress in February 2008 that al-Qaeda and other terrorist groups continue to seek nuclear weapons.³ Former US Secretary of Defense William Perry has warned that the probability of a nuclear terrorist attack in the next 10 years exceeds 50 percent, a view shared by Harvard expert Graham Allison.⁴ US Defense Secretary Robert Gates stated in January 2010 that "the thought of a terrorist ending up with a weapon of mass destruction, especially nuclear"⁵ would keep him awake at night.

The International Atomic Energy Agency (IAEA) has documented 18 cases of theft involving weapons-usable plutonium or highly enriched uranium (HEU),⁶ and there have been hundreds of proven cases of theft of nuclear materials around the world. In the 12-month period ending June 30, 2008, nearly 250 thefts of nuclear or radioactive materials were reported, although the amounts were small, prompting the head of the IAEA to warn that "the possibility of terrorists obtaining nuclear or other radioactive materials remains a grave threat."⁷ During 2007-2008, al-Qaeda and the Taliban are reported to have launched three terrorist attacks against Pakistani nuclear sites.⁸

All told, it is estimated that there are over 200 sites around the world from which terrorists could obtain either an intact nuclear bomb or the fissile materials required to assemble one.⁹

In November 1995, Chechen terrorists placed a "dirty bomb" in a Moscow park, but alerted a TV station and refrained from detonating it.¹⁰ On October 14, 2001, Israel is reported to have arrested a man linked to al-Qaeda who was trying to enter the country from the West Bank city of Ramallah with a radiological bomb hidden in his backpack.¹¹ On October 11, 2001, just a month after the 9/11 attack, CIA Director George Tenet warned President Bush of a report that al-Qaeda had placed a nuclear weapon in New York City. A Nuclear Emergency Support Team (NEST) was dispatched to New York and the report fortunately proved to be a false alarm.¹² To be on the safe side, 26 NEST's have been positioned around the US since 2001 to detect and respond to threats of nuclear terrorism. Flying around the country in helicopters and airplanes specially equipped with radiation detectors, they regularly scan cities for signs of nuclear weapons.¹³

Nuclear experts assess that a capable and well-organized terrorist group will be able to make a crude nuclear bomb, without the help of a state, provided that they have access to sufficient fissile materials.¹⁴ Only 20-100 kilograms of fissile materials are needed, and this can be purchased in small amounts to make detection even harder.¹⁵ With state assistance, of course, the difficulties would be significantly reduced and even eliminated completely, if an intact weapon was provided.

At present, al-Qaeda appears to be the only terrorist organization which might be able to develop a nuclear weapon on its own, although it probably does not yet have the requisite capabilities.¹⁶ Al-Qaeda has sought to obtain nuclear technology and materials, including HEU, since the early 1990s. Bin Laden has stressed the organization's "holy duty" to use nuclear weapons against the US and in 2001 al-Qaeda announced its goal to "kill four million Americans." Rudimentary sketches of improvised nuclear devices were found in a number of al-Qaeda hideouts in Afghanistan and some al-Qaeda leaders have even hinted that it has acquired nuclear weapons.¹⁷

Indeed, according to former CIA Director Tenet, bin Laden has been "singularly focused" on non-conventional weapons and "desperately wants" a nuclear bomb.¹⁸ A 2007 National Intelligence Estimate assessed that al-Qaeda will "continue to try to acquire and employ chemical, biological, radiological, or nuclear material in attacks and would not hesitate to use them if it develops what it deems is sufficient capability."¹⁹ The former head of intelligence for the US Department of Energy, Rolf Mowatt-Larsen, stated in the spring of 2008 that "al-Qaeda's nuclear intent remains clear," citing, inter alia, a successful effort by bin Laden in 2003 to convince a radical Saudi cleric to issue a religious ruling authorizing the use of nuclear weapons against American civilians.²⁰

Terrorist organizations might acquire the fissile materials needed to construct a nuclear device, and less likely an entire bomb, in the following manners:

- Official governmental supply. The main threats today are primarily from Pakistan and North Korea, with Iran in the near future and possibly Syria and other states in the longer term.
- Illicit sales by rogue elements within governments, militaries, and nuclear industries. Pakistan is currently the primary source of concern in this regard, but Iran and Russia are also possibilities.
- Loss of control over existing arsenals and stockpiles in the event of regime collapse. Pakistan is again the primary source of concern at this time. Iran is a threat in the future, especially following the dramatic unrest in 2009.
- Insufficiently guarded facilities,²¹ as in Russia, where thousands of nuclear bombs and large stockpiles of fissile materials remain.
- The international black market.
- Theft of nuclear materials.
- Acquisition of nuclear materials or a bomb by force.²²
- Rise of radical new regimes.

The threat of nuclear terrorism is real. The danger of a terrorist group acquiring a nuclear device can no longer be ignored.

CHAPTER 2: THE THREAT TO ISRAEL

The Middle East is a demographic, socio-economic, political, and military time bomb waiting to explode. Even before the recent global economic crisis, unemployment in Arab countries was the highest in the world, including among young people. Economic growth in the Middle East is likely to remain stagnant, with the region falling further behind the rest of the world. When combined with the highly combustible winds of religious fundamentalism, the danger of nuclear terrorism is particularly acute in this region.²³

There is little reason to believe that regional governments will permit political reform and greater self-expression, and political grievances will likely continue to be expressed in extremist and fundamentalist terms which render them inviolate and non-negotiable. For example, there is no assurance that Egyptian President Hosni Mubarak will be succeeded by a moderate and peaceful leader, or that Egypt will not become a radical Islamic state. The long anticipated regime change in Iran may give rise to a more moderate government, but may also result in an even more radical one. Saudi Arabia's future is also questionable. Even the future of Turkey, heretofore held out as a beacon of democracy and secularism within the Muslim world, is unclear.

Hatred of Israel, the US, and the West is likely to continue and possibly intensify. Progress towards peace with Israel and improvements in Arab-Western relations are unlikely to be sufficient to reduce the evolving socio-economic, political, and demographic pressures.

The Middle East faces another explosion today – of potential nuclear capabilities. Not only Israel, but also the Sunni Arab regimes, are deeply afraid of Iran's nuclear capabilities. In response, over a dozen Arab countries have announced civil military programs. Arab “civil” nuclear programs, as seen from past experience, have a nasty tendency to morph into military ones. The danger of nuclear terrorism, further abetted by the spread of nuclear technology and materials in the region, will be greatly exacerbated by the rise of a multi-polar nuclear Middle East. Nuclear terrorism could give rise to

a broader war in the Middle East and even lead to nuclear war. Nuclear war could give rise to more nuclear terrorism.²⁴

Israel's "Begin Doctrine" has succeeded so far in preventing Iraq and, according to press reports, Syria, from achieving nuclear capabilities. The US completed the process in Iraq, dismantled the Libyan nuclear program, and is leading global efforts to prevent Iran from achieving a nuclear capability. The regional players' ongoing inability to achieve a state-based nuclear capability may lead them and others to resort to nuclear terrorism as the ultimate means of leveling the playing field.

Peace in the Middle East, although desirable, unfortunately will not provide for true reconciliation. Realistically, what can be expected is little more than reluctant Arab acceptance of Israel's existence as a necessary evil and, to paraphrase Clausewitz, a continuation of enmity by other means. Just as the peace with Egypt and Jordan remains cold, with neither country truly reconciled to the legitimacy of Israel's existence, there is little reason to believe that a future peace with the Palestinians or Syria will be different. For the radicals who will never accept Israel, a peace agreement will further increase their determination to try and restore "Arab rights" by *all* means possible.

Paradoxically, a peace agreement with the Palestinians, based on the establishment of an independent state, might heighten the risk of nuclear terrorism. A Palestinian state might create a sanctuary for terrorist organizations, which could use its territory, with or without its knowledge and cooperation, to develop and deploy a nuclear bomb on Israel's borders and near major population centers. A peace agreement with Syria, which would presumably provide for a welcome severance of Syria's military relations with both Iran and Hizballah, might have a similar outcome. Peace agreements entailing territorial withdrawal might enhance Israel's nuclear deterrence vis-à-vis enemy states, but might do the opposite in terms of its deterrence against terrorists.²⁵ The more Israel is accepted in the region and establishes peaceful relations with Arab states, the more the radicals will be determined to find new ways of achieving their goals.

Nuclear terrorism, in contrast to the conventional terrorism Israel has faced for decades, would for the first time pose a potentially

catastrophic threat to the state. Just one relatively small bomb detonated in a strategic location (e.g., Tel Aviv) would have devastating consequences. For example, a 20 kiloton bomb would cause between tens and hundreds of thousands of casualties in the immediate aftermath. These numbers would increase over time, as radiation poisoning took its toll.²⁶

Although Israel as a state would survive, the consequences for its national resilience, economy, and security would be dramatic; indeed, many may choose to flee the nation following such an attack. Moreover, this scenario is based on the “rosy” assumption that only one nuclear bomb was detonated and that none of Israel's neighbors decided to take advantage of its dramatically weakened state to launch a potentially devastating conventional attack. Indeed, those contemplating nuclear terrorism against Israel might intentionally wait until they could deploy two or more such bombs before doing so. This would enable terrorists to multiply the devastation and threaten Israel's existence, or to hold it hostage and dictate terms between the first use and a threatened second one.

Nuclear terrorism poses a uniquely grave threat, not only because of its catastrophic consequences, but also because those most likely to pursue nuclear terrorism may be fundamentally nihilistic and thus undeterrable. In other words, they may be prepared to pay *any* cost in lives – their own and others' – in pursuit of their goal of destroying Israel. The fundamentalist terrorist organizations – al-Qaeda, Hizballah, Hamas, Palestinian Islamic Jihad (PIJ) – are all millennial movements with dreams of a greater Islamic order, for whom Israel's destruction is a sacred mission. A willingness to commit mass suicide to this end may thus constitute an embodiment of theological virtue. Bin Laden, in any event, has stated that “acquiring WMD for the defense of Muslims is a religious duty” and that “the ruling to kill the Americans *and their allies* – civilians and military – is an individual duty for every Muslim who can do it in any country....”²⁷

Suicide bombings, though not entirely unique to these organizations, have been their hallmark. Having already struck the “Great Satan” on 9/11, causing the deaths of nearly 3,000 people, it may be time for far more spectacular attacks, this time against the true incarnation of all

evil, the “Little Satan.” A nuclear terror attack against Israel, even if one assumes a devastating response, may be a worthy new type of mass suicide bombing, which will usher in the messianic era. As such, these organizations and the threat of nuclear terrorism will indeed be undeterrable.²⁸

Further complicating the picture, these organizations are deeply embedded in their local civilian populations and do not present clear military targets, as conventional armies and states do. In other words, a state actor contemplating retaliation for such a nuclear terrorist attack, or prevention for that matter, lacks a “return address.” Al-Qaeda, more of an amorphous network of loosely affiliated groups than an actual organization, poses a particular problem. The difficulties Israel encountered in fighting Hizballah in Lebanon in 2006 and the US in fighting al-Qaeda in Afghanistan and Pakistan are indicative of the character and severity of the problem.

If a state were to provide a terrorist organization with a bomb or with the fissile materials needed for a bomb, both unlikely but not unimaginable possibilities, nuclear forensics *might* enable them to be traced back to their source,²⁹ thus mitigating the problem of the absence of a return address. This, however, might provide for the identification of the supplier, not the actual perpetrator, and in any event the time required might render it an academic exercise. Moreover, the traditional wisdom, according to which nuclear states do not proliferate their capabilities to others, has been proven wrong in recent years, such as in the cases of North Korea and Pakistan. Indeed, North Korea, at least, appears to have believed that it could sell a plutonium reactor to Syria with impunity.³⁰

The issue of nuclear terrorism has received little public attention in Israel to date. The quote by Defense Minister Barak at the beginning of this study is a recent and rare exception. Shortly thereafter Barak warned that if Iran goes nuclear, an act of nuclear terrorism may take place in New York, Antwerp, or Ashdod within 10-15 years.³¹ A further and very early exception was a statement by former Prime Minister Shimon Peres, in an address to a joint session of Congress in December 1995, in which he stated that fundamentalism, combined with nuclear terrorism, is the nightmare of our age.³² With these

exceptions, a search of the archives of *Haaretz*, one of Israel's leading newspapers, over a 10-year period, yielded no more than a handful of stories related to the danger of nuclear terrorism against Israel. Similarly, almost *no* studies have been found on the issue by academic and think tank sources.

The public record notwithstanding, senior Israeli defense officials appear to be highly aware of the threat (“a nightmare scenario,” according to one),³³ but also believe that it is not yet imminent and is greatly outweighed both by the dangers posed by the Iranian nuclear program and other forms of nonconventional terrorism. Nevertheless, some counter-measures have already been taken, in cooperation with the US, including deployment of sensors at the Haifa and Ashdod seaports and Ben-Gurion International Airport.³⁴

A related but separate issue is that of radiological terrorism, which has received increasing attention in Israel in recent years. Though commonly confused in the public mind as a form of nuclear terrorism, radiological attacks do not, in fact, pose a threat of mass casualties. In some extreme circumstances it is conceivable that the number of deaths could reach a few hundred, but it is more likely that they will “only” be on par with the conventional terrorist attacks Israel experienced in recent years, which rarely resulted in more than 20 deaths.³⁵ Although not a major military threat, radiological attacks might have significant psychological affects on the public and warrant the special attention afforded to them. One former senior Israeli defense official believes that Iran would have no hesitation providing Hizballah with the materials needed for a radiological bomb, but would not supply a nuclear weapon or fissile materials.³⁶

A few years ago, the Israeli government decided to improve Israel's preparedness for radiological terrorism.³⁷ In 2008, the IDF Homefront Command distributed a new handbook to all homes in Israel which addressed the threat of radiological terrorism for the first time and placed the information on its website.³⁸ In August 2008 the Homefront Command conducted an exercise simulating a non-conventional missile attack on Haifa, although the nature of the warhead was not publicly specified.³⁹ An exercise in September 2008 explicitly simulated a radiological attack and was apparently part of a

multi-year series of exercises conducted at different levels of the government and various orders of magnitude. In addition to the Homefront Command, the police, emergency medical services, fire department, Ministry for Protection of the Environment, Ministry of Health, and other governmental agencies participated in the exercise.⁴⁰ Israeli Deputy Defense Minister Matan Vilnai defined 2009 as the year of preparations for a radiological attack.⁴¹

The list of those who might wish to carry out nuclear terror attacks against Israel is not long, but also not as short as one might wish:

- Iran, either from its own territory or from abroad, especially in Lebanon, or less likely in Gaza, the West Bank, or Syria.
- Al-Qaeda, Hizballah, Hamas, the PIJ, or other Islamic organizations.
- Splinter groups from the above and other organizations.
- Additional radical states, such as Syria, and terrorist organizations may join the list in the future.

Nuclear Terrorism: Threat Scenarios

The following section presents scenarios in which a nuclear terrorist threat against Israel might be manifested.

Scenario 1: Actual Use

The terrorist organizations listed above, Iran, and to a lesser extent Syria, are all openly and explicitly avowed to Israel's destruction. One can debate just how far they may actually be willing to go in pursuit of this objective, but to dismiss or downplay their desire would be to do an injustice to the seriousness of their intentions. Certainly no one in a position of responsibility in Israel or the United States can afford to do so.

The question, however, is not one of intention and desire, but of capability and anticipated costs. Even a highly limited nuclear capability ("one small bomb") would wreak havoc in Israel, and the damage to the nation's morale, economy, society, and regional standing would probably be irreversible and possibly existential. At a

bare minimum, the disruptions would be catastrophic, with ramifications lasting for decades.

In the absence of a "return address," the terrorist organization, or state perpetrator, might believe that it could deal Israel a devastating blow with impunity. For Iran, it might be an opportunity to achieve its goals behind a cloak of secrecy, albeit less gloriously but more effectively, and the day would presumably come when it would be able to take credit. One can also not dismiss the possibility that Iran and al-Qaeda might be able to overcome their deep-seated animosity and cooperate in the pursuit of the greater good, the destruction of Israel.

Scenario 2: Deterrence

A terrorist organization might seek a nuclear capability to counter Israel's conventional superiority and purported nuclear capabilities. Hizballah especially, but also Hamas in the future, might seek a minimal nuclear capability as a means of deterring Israel from attacking them, or from pursuing other objectives. Furthermore, even a minimal nuclear capability would enable Hizballah and Hamas to conduct ongoing low-level attacks (even severe ones) against Israel, in the confidence that Israel would be deterred from massive retaliation. This would require a declared capability, or at least a strongly suspected one.

Though unlikely, Iran might provide Hizballah with a nuclear capability as a means of further bolstering Iran's own deterrence against Israel,⁴² especially to prevent an Israeli strike on the Iranian nuclear program. Indeed, Hizballah's dominant position in Lebanon is the sole case to date of a successful Iranian attempt to "export the revolution." Iran might thus provide Hizballah with a nuclear capability as a means of promoting the organization's defensive capabilities and self-declared role as the defender of Lebanon. Iran might reason that Israel would perceive a nuclear Hizballah to be an even greater threat than a nuclear Iran and that this would provide a heightened deterrent.

Scenario 3: Compellence – The "Or Else" Scenario

An openly declared terrorist nuclear capability, or even a suspected one, could be used as a means of exerting decisive influence on Israeli decision making. A terrorist organization could demand that Israel acquiesce to some demand – for example, withdraw to the 1967 borders (or beyond), agree to a full return of Palestinian refugees, a release of jailed terrorists, or in times of war, that Israel cease advancing, or withdraw – "or else" suffer the consequences.

A variation of the "or else" scenario would be to hold Israel hostage by the very threat of a terrorist nuclear attack and of additional ones following a first use. The threat would have an enormous psychological impact on the Israeli public and could force the government into accepting a terrorist group's demands. A nuclear hoax might be similarly employed.⁴³ Compellence scenarios might also be directed against the US, as a means of limiting, shaping, or ceasing its support for Israel.⁴⁴

Scenario 4: Disruption and Weakening

Israel has long lived "under the gun" of dire and even existential Arab conventional threats, especially during the early decades. It has also faced non-conventional threats from Iraq, Iran, Syria, Egypt, and Libya. To this day, public discourse is thus often framed in existential terms, even when the threats clearly are not. History and the national psyche, however, are what shape state perceptions and actions, greatly amplified in Israel's case by the Holocaust and the experiences of its formative decades. Though Israel is a regional power today, the self-perceptions of its leaders and people are of a small, embattled nation, at war for its survival.

Israel's psychological and political difficulties living with the highly limited threats posed by Hizballah and Hamas are a small indication of how Israel might respond to the need to live under the shadow of nuclear terrorism. Over time, it could lead to severe erosion in public confidence in the state's ability to provide a reasonably safe and desirable environment in which to live, raise a family, and conduct business. The very knowledge that a terrorist organization such as

Hizballah or al-Qaeda had achieved nuclear capability, or was in the process of doing so, would have a severe impact on the Israeli public and on Israel's national resilience, even in the absence of an overt threat.

Many Israelis believe that the Arab countries, even Egypt and Jordan, remain implacably opposed to Israel's existence and that they are pursuing a long-term strategy designed to weaken Israel's determination to live in the region as a Jewish and democratic state. A terrorist nuclear capability would certainly be commensurate with this perception and would greatly strengthen it.

Scenario 5: Back Up

A terrorist nuclear capability would provide important backing for a state-based nuclear capability. Thus, if Hizballah or al-Qaeda acted in concert with a state-based nuclear threat, from Iran or Syria for example, this would provide far greater credibility to the latter. While Israel might reason that the state actor would prove rational, it would clearly be less confident regarding the terrorist organization.

Scenario 6: Decapitation

A nuclear terrorist capability could be employed to eliminate the Israeli political and military leadership and to disrupt the continuity of government. Israel has reportedly already taken measures to deal with a state-based nuclear threat of this nature, by building a nuclear resistant National Command Center outside Jerusalem.⁴⁵ While the command center might be able to provide safety for the national leadership when the threat was known and an alert declared, it would be ineffective in the case of a surprise attack, which is more likely in the event of nuclear terrorism than in a state-based scenario.

Potential Targets of a Nuclear Terror Attack

Major population centers, first and foremost the greater Tel Aviv metropolitan area, would obviously be the most likely targets for a terrorist nuclear attack. Tel Aviv and its suburbs are adjacent to the West Bank, and a future Israeli withdrawal from this area would place

the nuclear terrorist threat right on the Israeli border. Haifa is close to the West Bank and the Lebanese border. Given Israel's minute proportions, other towns, particularly those adjacent to the border such as Ashkelon, Ashdod, Eilat, and Kiryat Shmona would provide easily accessible targets. Although the damage would be smaller in these towns, an attack would cause many of the desired psychological, socio-economic, and politico-military benefits sought.

The affects of the attack would be further magnified if the perpetrator could threaten additional military, symbolic, or normative targets. The nuclear reactor in Dimona is one such example. An attack could even be "justified" on the grounds that it was merely designed to eliminate the source of Israel's alleged nuclear capability. The Defense Ministry and General Staff in Tel Aviv would be another "high value" military target. The possibility of an attack against the governmental complex in Jerusalem (Knesset, Premier's Office, Foreign Ministry, and more), or even against the symbolic Western Wall, cannot be ruled out. While the presence of a large Muslim population and Muslim holy sites in Jerusalem make this less likely for a state actor, such as Iran, nihilistic terror organizations, like al-Qaeda, may have fewer compunctions and believe that mass martyrdom is justified.

Delivery Mechanisms

The potential means of delivering a nuclear terrorist threat against Israel would be similar to those applicable to other countries, with one important addition – rockets (see below) – and would be greatly abetted by the country's minute proportions. Below is a list of possible delivery modes:

- Sea – via ships, ship passengers, and ship containers, or smuggling by sea, such as Palestinian attempts to smuggle arms into Gaza in floating barrels. Israel's tight control of its maritime borders makes this a difficult but not impossible task, especially considering the shipments' small dimensions and Israel's comparatively long coastal borders.
- Air – airliners, passengers carrying a "suitcase bomb," or air freight. An attempt might be made to penetrate Israeli airspace with a nuclear bomb placed on a private plane or a

small aircraft (UAV), or with a 9/11 style attack. Israel's airspace is closely controlled, but for those seeking to use a nuclear device, as opposed to effective operational use, being shot down close to the border might be sufficient.

- Land – Israel's long land borders are less well monitored than its maritime and air borders. Their length and numerous official crossing points make it more difficult to prevent dangerous shipments. Drugs and arms have been smuggled through the Lebanese border town of Raghar, and drugs, prostitutes, arms, and terrorists through the porous Egyptian border. The Jordanian border is better controlled, but not hermetic. Following years of terrorism, the West Bank is now well-controlled and the partially completed security barrier makes illicit crossings difficult, though far from impossible. The official border crossings in the Jordan Valley and in Gaza are further points of vulnerability.
- Rockets and missiles – such as those already in the possession of Hizballah, could be fitted with nuclear warheads, a delivery threat which is largely unique to Israel. While the missiles' small payloads and basic inaccuracy make them inappropriate delivery vehicles for ordinary nuclear-military purposes, they are effective weapons of terror. The large size of Hizballah and Hamas' rocket arsenal and their dispersal in civilian neighborhoods make detection and elimination of the threat a particularly severe problem.
- Mail – such as a Federal Express or similar package shipment.

This chapter reviewed the threat of nuclear terrorism to Israel. In a region where enmity toward Israel is unlikely to disappear, radical elements will attempt to strike at the Jewish state by all means possible.

CHAPTER 3: ISRAEL'S POLICY OPTIONS

The danger of nuclear terrorism faced by Israel is real and may be manifested in a variety of scenarios and by various means. The following section explores the options at Israel's disposal for attempting to deal with this grave threat. It begins with Israel's policy options, before turning to those which could be conducted in cooperation or even in conjunction with the United States.

Prevention

Other studies have presented the operational means by which a country could seek to prevent the emergence of a nuclear terrorist threat, including intelligence, interdiction, and various offensive and defensive measures. There is no need to reproduce them here. Suffice it to say that the development of a nuclear terrorist threat entails a series of complex acts and stages, beginning with the basic decision to pursue the capability, acquisition of sufficient fissile material for a nuclear weapon or an intact one, the requisite knowledge to bypass safeguards in an intact weapon or to assemble one, and the ability to transport and detonate the device. Each of these stages provides unique opportunities to forestall the threat.⁴⁶

Detection of the threat and its elimination, once discovered, constitute the primary obstacles to prevention. If a nuclear weapon was acquired intact, the size of the support facilities required would be minimal, making detection extremely difficult. Although the number of persons who would have to be involved would not be small, thereby providing opportunity for intelligence detection and interdiction, the extreme secrecy practiced by the organizations in question would make this very difficult. To the extent that the weapon required a developmental program, even assuming third-party supply of the fissile materials and various components, the prospects for detection would grow accordingly.

Nevertheless, the difficulties the US encountered in tracking down bin Laden and other al-Qaeda operatives and Israel faced in detecting short-range rockets in Lebanon and Gaza, and the ongoing doubts whether all of Iran's nuclear facilities have been exposed despite

extensive IAEA inspections, are indicative of the challenges posed by detection of a terrorist nuclear weapon. Once detected, the problem of eliminating the threat, before it could be detonated, would remain critical and hugely difficult.

Deterrence

Deterrence is a primary tool of policy for threats ranging from low-intensity conflict (LIC) to nuclear conflict. It is typically assumed, however, that deterrence will be ineffective in the case of nuclear terrorism, due to the nihilistic nature of many modern day terrorists and even states like Iran.⁴⁷ Upon closer look, however, the picture is more complex.

The primary source of a state-based nuclear terrorist threat to Israel stems today and for the foreseeable future from Iran. Iran clearly has a deep theological commitment to Israel's destruction and has proven its willingness to devote significant resources to this end, including development of a military nuclear capability designed, at least in part, against Israel. In pursuit of Israel's destruction, Iran would presumably be willing to suffer a major loss of life. Thousands? Yes. Tens of thousands? Presumably. Hundreds of thousands, as it lost in the war with Iraq in the 1980s? Millions? Untold destruction?

Iran must take into account that Israel is widely considered by the international community to be a nuclear power and, if so, that a nuclear crisis between the two countries could lead to a "Tehran for Tel Aviv" type exchange, or an even broader one. While a precise assessment of Iran's cost-benefit analysis is unknowable, in other words, at what point the divine goal of destroying Israel ceases to be worthwhile even for its millennial leaders, Iran does appear to be a rational player and thus deterrable. This contention could be very wrong: when God enters the picture a nation's strategic calculus may change, and there is no doubt that Iran's policies towards the US and especially Israel are heavily affected by theology and emotion. The price of being wrong may be no less than national existence.

Iran could also provide the necessary nuclear capabilities to one of its affiliated terrorist organizations, such as Hizballah or Hamas. Over

the years, however, both have repeatedly proven themselves to be deterrable. Though extremist in their ideologies, Hizballah and Hamas have clear domestic agendas which at times override their *jihadi* aspirations, that is, their commitment to Israel's destruction. While obviously willing to pay a heavy price in pursuit of the latter goal, they also attach great importance to domestic social and political considerations and seek to play a long-term leadership role in their respective societies. Both have demonstrated considerable sensitivity over the years to domestic opinion and have often refrained or limited their escalations with Israel out of concern for the impact on their public standing. Similarly, Hizballah and Hamas value their military capabilities and the lives of their leadership cadre and public. Hamas' willingness to accept a cease-fire with Israel following the Gaza operation in early 2009 and Hizballah's repeated willingness to cut temporary deals when in its interest to do so, including observance of the cease-fire agreement in 2006, are cases in point.

Situated on Israel's borders and within easy reach of its military capabilities, Hizballah and Hamas,⁴⁸ no less than Iran, have that one essential quality necessary for deterrence; they have a great deal to lose. This does not detract from the severity of the threat posed by their acquisition of nuclear capabilities, such as the ability to terrorize Israel's population, to conduct large-scale "conventional" terror attacks with relative impunity, or to attempt to dictate terms, but does place the threat in the appropriate context. Conversely, one cannot dismiss the possibility that acquisition of the capability to cause Israel devastating damage might affect their heretofore presumed cost-benefit analysis.

The biggest question mark is in regard to al-Qaeda. Deterrence theory is based on the ability to affect an adversary's cost/benefit analysis, by threatening that which it holds dear, that is, its values. Classic nuclear deterrence is thus based on either counter-force targets (nuclear military capabilities, e.g., missiles or bombers) or counter-value targets, such as population centers, major economic interests, or other targets of high importance. Al-Qaeda, however, lacks an organizational structure and operational and logistical bases of significance. Additionally, although concentrated in Afghanistan and the border areas of Pakistan, it has no host country or population.

Moreover, it proclaims its willingness to die for its cause. When viewed in these terms, al-Qaeda certainly appears undeterrable.

The question is whether this is deterministic, or whether there may be ultimate values of importance to al-Qaeda. For example, it did demonstrate sensitivity to criticism that its attacks against US forces in Iraq resulted in the deaths of far more fellow Muslims than American soldiers. While al-Qaeda would certainly be willing to pay a heavy price in human lives to achieve its goals, such as Israel's destruction, the claim that there is absolutely no limit to its basic nihilism is assumed, not known. Would a declaratory American or Israeli retaliatory policy, in the event of a nuclear attack, stating that the absolute annihilation of al-Qaeda's leadership and their families, at all costs, would be their goal have no impact at all? Would a threat to the existence of major Muslim population centers have no impact on al-Qaeda's thinking? And if they are willing to suffer unlimited loss of life, are there no other values of importance to them, such as Muslim cultural and religious sites? Might their broad denunciation by Muslim leaders, clerics, and publics, for practical, if not moral reasons, over the vast destruction caused to Muslim interests by the retaliatory attacks, not have an impact on the organization's calculations and even cause a rupture within it?⁴⁹

The answers to these questions cannot be known with any degree of certainty. Nevertheless, a question mark should be raised regarding the common wisdom that al-Qaeda is simply undeterrable. As the old saying goes, everyone has a price, the question is just how high. Retaliatory options, such as those raised above, may appear unthinkable to some, but the threats they are designed to deter are no less so.

An End to Israeli Nuclear Ambiguity

A further means of addressing a potential nuclear terrorist threat and of enhancing Israel's deterrent posture might be through a change in its long-standing policy of nuclear ambiguity. Israel is widely thought by foreign observers to be a nuclear power and any potential perpetrator of nuclear terrorism would have to presume this to be the case. Given this presumption, it is unclear that an end to ambiguity

would generate additional deterrent value. Moreover, Israel would appear to have excellent reasons for maintaining its current posture and it is highly doubtful that anything short of a major strategic benefit would elicit a change in this. This option thus appears to be of little utility.

Defensive Measures and Consequence Management

Israel has an extensive homeland security system, including emergency services, temporary evacuation plans, and civil management. It also has widespread passive defenses, including shelters in most homes and neighborhoods. Israeli construction, whether residential or commercial, is virtually all stone, providing some measure of defense compared to the wooden structures of Hiroshima. The emergency management system, however, is clearly not up to the extraordinary demands of a nuclear scenario. The 2006 war in Lebanon demonstrated its overall limitations in the face of a far more limited threat, although important steps have been taken to rectify the failings uncovered.

In terms of active defenses, Israel has an operational anti-ballistic missile system (the “Arrow”) and an anti-rocket system (“Iron Dome”) expected to be operational in mid-2010. These defenses certainly provide a modicum of security, but are far from sufficient. If “only” one nuclear armed missile or rocket were to get through, this would constitute a catastrophic and unacceptable failure. Defense is thus not a sufficient option when it comes to nuclear threats. At the same time, a potential attacker would have to take the possibility of interception into account. Israel would presumably retaliate massively and the perpetrator would suffer all of the consequences, despite the failed attempt. For a nuclear terrorist, however, the very attempt might be sufficient.

This chapter discussed some of the primary policy options available to deal with the threat of nuclear terrorism. While an end to Israel's nuclear ambiguity is not useful and defensive measures are of limited utility at best, other policies, such as prevention and deterrence, do hold out some measure of hope. These policies are already part of Israel's strategic doctrine and need to be calibrated toward the nuclear

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terror threat. We now turn to a final series of policy options, entailing cooperation with the US.

CHAPTER 4: US-ISRAELI COOPERATION

As with so many other areas of Israeli national security policy, cooperation with the US is high on the list of options available for dealing with the threat of nuclear terrorism. For the US, the potentially devastating impact on a close ally, as well as the horrific precedent which would lower the bar for similar attacks against the US and other allies, warrants the broad cooperation outlined here. In this case, however, even the US could not provide a fully satisfactory answer to the threat it faces or that Israel faces. From the public record, it is not clear if and to what extent the threat of nuclear terrorism and the means of coping with it have been raised in various bilateral forums.

Heightened Attention and Priorities

President Obama, like his predecessor, understands the need to prevent nuclear materials and weapons from falling into terrorist hands and pledges to devote the necessary efforts.⁵⁰ In reality, however, neither the US nor any other country is doing everything in its power to address the threat. Moreover, as the trauma of 9/11 recedes into the collective American consciousness, the heightened attention devoted to the threat of nuclear terrorism is likely to ebb as well. Graham Allison, one of the foremost experts on the issue, has called upon the US and Russia to lead a Global Alliance Against Nuclear Terrorism, designed to take every step possible – physical, technical, and diplomatic – to prevent nuclear materials and weapons from falling into the hands of terrorists.⁵¹

In Israel, despite awareness of the issue, nuclear terrorism has not been a foremost priority to date.⁵² Facing myriad other threats, Israeli decision making has always focused on the immediate and concrete, rather than preparations for eventualities which may or may not materialize down the road.⁵³ In this light, Israel's preoccupation with the Iranian nuclear program and other non-existential, but nonetheless immediate threats, is understandable, if risk fraught. The potential dangers posed by nuclear terrorism, however, are so dire that greater attention and resources must be devoted to them. One important measure would be to appoint a senior official and lead agency to

spearhead Israel's efforts in this area, which are currently diffused throughout the defense establishment and lacking in a true champion.

This section focuses on the possible US-Israeli response to the threat of nuclear terrorism to Israel, but part of the answer lies in the broader counter-terrorism and counter-proliferation efforts of the US and international community. In recent years, a number of official American policy statements, academic studies, and public figures have elucidated the essential components of a comprehensive policy to stem the threat of nuclear terrorism. The following is a brief overview of some of the essential components, of relevance to the threat Israel faces as well.⁵⁴

Diplomacy

Active global diplomacy under US leadership is necessary to further strengthen international resolve to deal with the threat of nuclear terrorism and to make better use of already existing diplomatic tools. For example, UN Security Council Resolution 1540 requires that all UN members adopt and enforce measures to counter WMD proliferation, criminalize proliferation, improve physical protection of nuclear facilities, strengthen export controls, and improve cooperation on interdiction and border security. The Global Initiative to Combat Nuclear Terrorism, launched by the US and Russia in 2006, established a framework for enhanced international cooperation and the building of state capacities to combat the threat. Conditional engagement of rogue states, such as Iran and Syria, with clear timelines and a willingness to impose severe penalties if talks fail, are part of the diplomatic effort to stem the spread of nuclear capabilities, with important ramifications for the threat of nuclear terrorism. Diplomatic pressure must be stepped up to deny terrorist organizations state sponsorship, assistance, and sanctuary, concomitantly with efforts to strengthen governmental systems in failed states, such as Sudan, Somalia, Yemen, and Afghanistan. Israel's role in this diplomatic effort is largely passive, limited primarily to providing intelligence support for the American efforts.

Control Over Weapons and Materials

A variety of programs designed to improve control over nuclear facilities, stockpiles, and personnel, such as the Cooperative Threat Reduction program in Russia and other states of the former Soviet Union, should be completed. Pakistan today warrants particular attention. This is a “drying up the swamp” approach – the fewer the number of “loose” nukes, materials, and experts, the lower the risk of a terrorist organization obtaining the requisite nuclear capabilities. A strengthened global nonproliferation regime, along with increasingly stringent IAEA inspections, are a further means of controlling existing nuclear materials and programs. Israel has an interest in supporting American diplomacy in this area.

Counter-Terrorism and Counter-Proliferation Programs

Programs in the areas of counter-terrorism and counter-proliferation, such as the Proliferation Security Initiative, which provides for inspection of ships suspected of carrying terror related materials, equipment, or personnel, and the Container Security Initiative, through which port security has been greatly upgraded in the US and around the world, should be further strengthened and expanded. Heightened international cooperation in the areas of law enforcement, border security, export controls, intelligence sharing, and covert operations to prevent, detect and interdict nuclear terrorism are similarly essential. Combating terror financing through a variety of means, inter alia, the Financial Action Task Force, is a further measure of great importance. Heightened US-Israeli cooperation in the above areas, especially intelligence exchanges and joint simulation exercises, are particularly important, as are covert and overt counter-terrorist and counter-proliferation operations, whether for detection, interdiction, or prevention. In some cases, significant military force, over and above special forces, will also be required. Military options might include unilateral American or Israeli ones, or coordinated and even joint operations.

A Staunch and Uncompromising Retaliatory Policy

Potential perpetrators of nuclear terrorism must be convinced that the US and Israel will retaliate devastatingly. For Israel, this means a “shoot first, no questions asked” policy. Both those clearly responsible for an attack (if any) and those reasonably *suspected* of involvement must be held accountable.⁵⁵ There will be no room for diplomacy, and Israel must respond with all capabilities at its disposal, without waiting for the results of nuclear forensics.

In the event of a declared nuclear terrorist capability, a stated intention to acquire one, or an advanced suspected one, the known or suspected perpetrator and host country should be attacked with overwhelming and if necessary devastating force, in the attempt to prevent the threat’s materialization. As things stand today, and unless virtually irrefutable and immediate evidence exists to the contrary, Israel should adopt a *declared* retaliatory policy which holds Iran and/or al-Qaeda responsible for any nuclear attack, regardless of who may or may not have carried it out.

If the source of a terrorist nuclear attack against Israel is unknown, or if it is known to originate with al-Qaeda or Iran, Israel should make it clear that its response will be unlimited and include not just major population centers, but all sites of value, including those of major symbolic importance for the Muslim world. A declaratory policy such as this might be highly inflammatory and further exacerbate the religious dimension of the US and Israeli confrontations with the Muslim world. This policy should therefore not be announced officially, as part of Israel's declared retaliatory posture, but should be made “known,” much as the international community “knows” that Israel has nuclear weapons, whether they do or do not in fact exist. The policy can be “leaked” in a variety of manners.

For Israel, its declared and actual retaliatory policy must be one and the same. There can be no difference between the two. A one-time failure to act devastatingly to prevent or retaliate for nuclear terrorism would be an invitation for further attacks and guarantee Israel's final destruction. At present, the state of the threat is such that the need for

a change in Israel's deterrent policy is not yet imminent, but it must be followed closely to determine the appropriate timing.

As a global power, the US presumably cannot adopt an indiscriminate “no questions asked” policy, such as recommended above, and would be hard pressed to support an Israeli policy of this sort should the need arise. For the US, especially in the case of an attack on a foreign nation, forensics will be crucial. At the same time, American determination to act decisively to prevent the emergence of a nuclear terrorist threat and to retaliate with devastating force against those responsible, must be explicit and beyond question. American declaratory policy should be strengthened in a manner designed to eliminate the doubts in the region regarding President Obama's determination and resolve as a leader.

For the US, unlike Israel, the need to articulate a significant new deterrent strategy is more limited. Indeed, US declaratory policy on the nuclear terror threat to Israel would not be substantially different from its general posture on the issue of nuclear terrorism. Former US President Bush declared that the US would come to Israel's assistance in the event of an Iranian nuclear attack. Secretary of State Clinton has spoken of a nuclear umbrella for nations of the region and of a devastating US response. This could be further expanded on by President Obama to specifically include nuclear terrorism, along with an expression of unconditional support for all measures Israel might have to take in the face of this threat. Given the presumed American reservations regarding the proposed Israeli “no questions asked” policy, however, the US would refrain from further elucidation of the nature of those measures.

In terms of actual, as compared to declaratory, deterrence policy, the fact that Israel is assumed by the international community to have nuclear capabilities of its own would relieve the US of the burden of responding if Israel was attacked. This is just one of a number of reasons why a continuation of Israel's policy of nuclear ambiguity is in the American interest and should be further adhered to by the two countries over time.

Joint Prevention Efforts

Two overall considerations have to be addressed in terms of prevention: whether the nuclear terrorist threat to Israel is still thought to be in the development stages, or whether an operational capability is already known to exist. In the former case and depending on how far along the process, there will be time for the two countries to pursue a broad range of preventative options, from limited, targeted military operations, to massive options, including occupation of the country suspected of harboring the threat (e.g., Lebanon), in order to root it out *at all costs*. Operations may be Israeli, American, coordinated, or joint. Once action is taken, however, thereby exposing that the threat has been detected, the window of opportunity will be short and will have to be successfully utilized, before it is spirited away and the trail lost, possibly for all time. In the event of an advanced program, especially if development is being conducted in a remote location (such as Afghanistan or Iran), preventative measures will have to be similar to those adopted in the event of an already extant capability, as follows.

Once an operational nuclear terrorist capability exists, or is thought to exist, the window of opportunity for action is severely attenuated, though it may be partly eased by an assessment of when and how the capability is to be used. Preventative efforts will have to be of an “at all costs” nature, in which *any and all* capabilities will be brought to bear to ensure complete success. There will likely be no second chance and the measures adopted must be such that they *guarantee* the threat's complete elimination. While a limited, targeted, and unilateral Israeli operation might be possible in the case of a capability still in development, the prospects for this are much lower in the case of an operational capability. Given the need for immediate and guaranteed success, a combined US-Israeli operation, or even a purely American one might be necessary, assuming the existence of unique American capabilities in this area.

As part of the prevention effort, all intelligence means available to the United States and Israel should be employed to ensure early detection of a development program or the possible transfer of an intact weapon to a terrorist organization or state. Cooperation in internal detection

measures is also warranted, including US willingness to share its capabilities in this area, such as deployment of NEST teams in Israel, if and when the need should arise. Israel's own capabilities are not publicly known, but presumably fall short of the US'. New emphasis should be placed on joint simulation and training for crisis scenarios, including detection, response, and consequence management, both at the local and national levels. American assistance could potentially be of great value if, for example, it was suspected that a terrorist organization had placed a nuclear bomb in Tel Aviv, or elsewhere in Israel.

US-Israeli Strategic Upgrade or Security Guarantee

An upgrading of the bilateral strategic relationship, whether a formal security treaty or lesser guarantee, is often mentioned as one of the primary means by which the US could provide Israel with “extended deterrence,” whether in the face of nuclear or other severe threats. The advantages and disadvantages of a further strategic upgrade of the existing bilateral relationship have been analyzed elsewhere, but the efficacy of US extended deterrence guarantees is a source of debate.⁵⁶ Suffice it to say that it is questionable to what extent this would truly enhance Israel's deterrence, assuming international reports of its nuclear capabilities are correct. Certainly in the case of nuclear terrorism, extended deterrence would have little if any additional deterrent value of consequence.

CONCLUSIONS AND RECOMMENDATIONS

For the past 15 years Israel has been focused first and foremost on the Iranian nuclear threat, while Palestinian and Hizballah terrorism has absorbed much of the national military and civilian leadership's remaining attention. While understandable, this focus may have come at the expense of the attention afforded to the rising and potentially even graver threat of nuclear terrorism. This study is the first to examine the nature of the nuclear threat Israel faces and to propose potential responses to it. As such, it is hoped that it will inspire other scholars and, even more importantly, government officials charged with meeting this threat, to further explore its nature and devise even more sophisticated means of coping with it.

The following policy recommendations should be adopted and further elaborated on by the appropriate governmental organs:

- Israel must accord greater attention and resources to the threat of nuclear terrorism, at the intelligence, operational, diplomatic, and strategic planning levels.
- A senior official should be appointed with overall inter-agency responsibility for developing and coordinating policy in regard to nuclear terrorism.
- Intensive efforts must be devoted to development of measures of prevention and consequence management, alone and in conjunction with the US and other countries.
- Israel should adopt and further elucidate a staunch and uncompromising deterrent policy, such as the “retaliate first, no questions asked” approach outlined in this paper.
- Intensive study must be devoted by governmental agencies, in cooperation with outside experts around the world, to examine potential values of importance to al-Qaeda and other nihilist organizations, as the basis for deterrence. We can not simply allow ourselves to consider them undeterrable.
- A top-level dialogue must be held with the US and other concerned countries in order to develop a coordinated policy. The threat of nuclear terrorism should become an integral part of the "strategic dialogue" with the US in a variety of forms, such as the Joint Political Military Group (JPMG).

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- Already existing US and Israeli programs for counter-terrorism and counter-proliferation are an important and integral part of efforts to prevent al-Qaeda and other organizations from engaging in nuclear terrorism and should be further expanded.

To date, there is no convincing evidence that any terrorist group has acquired a nuclear weapon or the materials needed to make one. The technical challenges to doing so are daunting, even for an organization such as al-Qaeda. This good news, however, comes with a crucial caveat; it is true only “as far as we know.”⁵⁷ Regardless of potential adversaries' intentions, whether for actual use, deterrence, or compellence, Israel must take into account that a nuclear terrorist threat could emerge in the foreseeable future and act accordingly to minimize it. Even if the threat probability may be low at this time, the potential costs are monstrous and the threat assessment is likely to change significantly in the coming years. The time to act is now.

Notes

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⁵² Private communication, December 24, 2009.

⁵³ See C. Freilich, "National Security Decision Making in Israel: Processes, Pathologies and Strengths," *Middle East Journal*, vol. 60, no. 4, 2006, pp. 635-63.

⁵⁴ See, among others, the "National Strategy for Combating Terrorism," US Government, White House, September 2006, available at <http://www.state.gov/s/ct/rls/wh/71803.htm>; Bunn, "Securing the Bomb"; Allison, *Nuclear Terrorism*; Levi, *On Nuclear Terrorism*; Ferguson and Potter, *The Four Faces of Nuclear Terrorism*.

⁵⁵ See Jenkins, *Will Terrorists Go Nuclear?* pp. 286-7.

⁵⁶ J.G. Stein, "Extended Deterrence in the Middle East: American Strategy Revisited," *World Politics*, vol. 39, no. 3, April 1987, pp. 326-52; See also C. Freilich, "Speaking about the Unspeakable: The US Dialogue on Iran's Nuclear Program," Washington Institute for Near East Policy, 2007; and "Defusing an Existential Threat," *Arms Control Today*, vol. 38, no. 3, November 2008, pp. 6-11.

⁵⁷ Bunn, "Securing the Bomb," pp. 12-14.