

THE FUND FOR PEACE

THREAT
CONVERGENCE:
NEW PATHWAYS
TO PROLIFERATION?



CONFERENCE REPORT
WINTER 2006



Threat Convergence: New Pathways to Proliferation?
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This report contains the major findings of the Fund for Peace conference on threat convergence held in Winter of 2006.

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The report paraphrases the remarks of the conference participants.

Any errors or omissions are entirely the responsibility of the FfP and not the speakers.

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Introduction

The National Commission on Terrorist Attacks Upon the United States, known as the 9/11 Commission, observed that the threats we face today are defined more by the fault lines within societies than by the territorial boundaries between them. Commission members wrote that “from terrorism to global disease or environmental degradation, the challenges have become transnational rather than international. That is the defining quality of world politics in the twenty-first century.” Applied to the security sector, this reality forces new perspectives and approaches to be applied to our biggest challenges: the proliferation of weapons of mass destruction, global terrorism and the problem of weak and failing states (WFS). The term “threat convergence” refers to the challenges emerging from new dynamics that tie the three threats together. No longer bound by the rules of a system of states, criminal and illicit networks flourish in the facilitative environments of ungoverned spaces, cultural enclaves in strong states, and in weak and failing states. These networks, and the volatile settings that enable their activities, create an entirely different world from that which was originally envisioned by the crafters of WMD policies and institutions. The possibility of the spread of WMD to non-state actors has widened. Indeed, this “nightmare scenario” could be considered the biggest single security threat of our time.

The Fund for Peace (FfP) has launched a new project to understand this phenomenon and seek ways to avert it. The central objective is to explore how ongoing work in the fields of counter terrorism, WMD proliferation, and WFS can be integrated to anticipate and prevent a catastrophic act of WMD terrorism. The project strives not only to understand the complex factors and enabling environments that could facilitate nuclear proliferation to non-state actors, but to identify the most likely scenarios, and provide recommendations to policy makers on what steps to take to build safeguards and protections rooted in international and regional cooperation.

The FfP Threat Convergence project began with a “mapping workshop” in April 2006 with experts from the three fields of WMD proliferation, terrorism, and WFS. This workshop helped to define the agenda for a wider conference of experts convened at the Airlie Conference Center in Warrenton, Virginia from November 30 to December 1, 2006. This report contains a summary of the main ideas presented at the Winter 2006 conference. Participants exchanged information on transnational criminal and terrorist alliances, illicit supply networks, and insecure stocks of fissile material, as well as the leading ideological enablers and objectives that could lead to an act of nuclear terrorism. Conference participants also developed three possible scenarios to assess the most credible and likely circumstances in which terrorists could carry out such an attack.

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Background to the Conference: Threat Convergence Mapping Workshop

A model that explores the “supply and demand” sides of threat convergence would provide the most insights.

To initiate the Threat Convergence project, in April 2006 the Fund for Peace convened a “mapping workshop” of twenty leading thinkers in the fields of WFS, terrorism, and WMD to discuss how to shape the agenda for a larger conference of experts to explore the question of threat convergence. After considering a number of approaches, workshop participants concluded that a model that explores the “supply and demand” sides of threat convergence would provide the most insights. Specifically, the workshop concluded that the conference should examine the sequence of events on the supply and demand chain that might permit a nuclear attack by a terrorist entity operating in the enabling environments of WFS. They reasoned that by examining the “sites” that provide these facilitative environments, and exploring the relationships between diverse actors that coalesce around these “sites,” researchers would advance learning and inform scenario planning for emerging and as-yet-unanticipated cases. Furthermore, they reasoned that these relationships might not follow known patterns; thus, researchers must be concerned with novel approaches to studying the subject. To this end, a set of scenario parameters was developed to help game possible pathways to proliferation and generate hypotheses that will direct research. Three scenario parameters were proposed that would inform an “end-to-end” analysis, from supply to distribution to end-user:

1. A Known Terrorist Group Carrying Out a Successful WMD Attack
2. State – Non-State Collaboration Leading to an Act of WMD Terror
3. Unknown or Not Yet Existing Terrorist Group Carrying Out a Successful WMD Attack

Together, the supply/demand framework and scenario parameters developed at the mapping workshop provided the conceptual framework for the conference held at Airlie House in November and December 2006.

Plenary Panel #1

The Supply Side: Transnational Criminal Networks, WMD Traffickers, & Materials

Moderator:

Michèle A. Flournoy, Senior Adviser, International Security Program
Center for Strategic and International Studies

Panelists:

Dr. David Albright, President, Institute for Science and International Security

“Terrorists’ Acquisition of Nuclear Weapons: The Dangerous Synergy between Weak States and Illicit Nuclear Procurement”

Dr. Jeffrey Lewis, Executive Director, Managing the Atom Project
Harvard University

“The Economics of Nuclear Terrorism”

Dr. Louise Shelley, Director, The Transnational Crime & Corruption Center
American University

“Growing Together: Ideological and Operational Linkages between Terrorist and Criminal Networks”

The three experts who inaugurated the conference emphasized the fact that, in today’s world, there are potentially innumerable options available for a terrorist wishing to procure nuclear weapons. By exposing vulnerabilities in weapons storage and the lack of security in weak states, the panelists focused on the potential for illicit trafficking and nuclear proliferation to occur from the “supply” side. They agreed that, at present, it is difficult for a non-state actor, or actors operating in collusion, to obtain the fissile material, technical expertise, or “dual-use” technology and equipment necessary to construct or procure a nuclear explosive device. The three major avenues to nuclear terrorism are: 1) theft occurring from the lack of secure storage of existing nuclear weapons in states in the former Soviet Union, 2) constructing a bomb “from scratch” in a relatively isolated area, and 3) illicit transfer of nuclear materials based on business connections among conventional smugglers, criminals and terrorist networks.

According to panelists, there is no longer a credible debate about whether or not terrorists are interested in WMD. Documents attributed to Al Qaeda that were captured in a safe house in Afghanistan in 2001 prove that Al Qaeda explored the construction of a nuclear “super bomb,” and there is evidence that Al Qaeda-linked terrorists have attempted to buy fissile material on the black market and reportedly had meetings with Pakistani nuclear scientists before the ouster of the Taliban in October, 2001. The 2006 case of the poisoning of former Russian operative, Alexander Litvenenko, with the rare isotope Polonium 210, plus the seizure of small quantities of Highly Enriched Uranium (HEU) in Georgia in February 2007, are the most recent examples of the existence of underground networks for the transfer of nuclear and radiological material. The International Atomic Energy Agency (IAEA) has confirmed hundreds of cases of trafficking in nuclear materials in the past dozen

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The lack of sufficient security upgrades and accountability in civilian nuclear infrastructures worldwide, plus high levels of corruption, poverty, and a lack of regulatory and surveillance capabilities in weak states, could increase the accessibility of fissile material .

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years, many of them originating in the Black Sea/ Caucasus region. The question is: what percentage of total nuclear trafficking do these cases represent? Much debate exists over:

1. The type of technology that terrorists prefer,
2. Where the most vulnerable sites are,
3. Which groups have both the capability and desire to secure and use nuclear weapons, and importantly,
4. How existing illicit networks could be used to traffic WMD

The panel's analysis of the supply side of the threat convergence equation emphasized formidable challenges from loose fissile material originating from within the Former Soviet Union (FSU). Such material appears, at best, poorly accounted for and, at worst, frequently trafficked. There is little debate on the existence of such material. Russia has a great deal of Uranium, Highly Enriched Uranium (HEU), Plutonium, and other radioactive material that has already crossed international boundaries and, in some parts of the country, may be minimally secured. However, experts disagree on whether large quantities of loose material are accessible to illicit traffickers, buyers, or thieves. There is also debate regarding the availability of technical expertise to fashion usable, bomb-grade ingots of HEU or Plutonium that could be utilized by terrorists or construct a bomb. Experts pointed out that, lacking the resources normally afforded by a nation state, non-state actors operating on the fringes of society with minimal resources available to them probably would not have the necessary organizational or technical expertise to build a bomb. Nevertheless, the lack of sufficient security upgrades and accountability in civilian nuclear infrastructures worldwide, plus the attendant high levels of corruption, poverty, and a lack of regulatory and surveillance capabilities in weak states, could increase the accessibility of fissile material to non-state actors in many regions besides the FSU.

In addition to the threat of non-state actors procuring nuclear material in loosely governed areas, panelists pointed out that the links between traffickers and terrorists can occur in known and regulated areas. Research has shown that links between criminal traffickers and terrorists have been established in prisons and in the contracting of basic services that can occur across state boundaries. One panelist noted that criminal elements will move anything of value regardless of the ultimate buyer and they may not even know what goods they are smuggling. Because they do not operate in terms of fiscal years or with corporate oversight, they can focus on lucrative deals, which could include nuclear arms and materials. Further, it is in the meeting points of terrorists, smugglers, and first world enablers that both the greatest threats and the opportunities to counter them intersect. Such meeting points could occur on the Internet, in first-world prisons, in financial transactions that utilize both official and unofficial means of transferring and laundering money, and in corollary and supplemental trade, such as in drugs and small arms trafficking. Thus, bank accounts, chat rooms, prisons, first and second world border crossings, and similar transactions can become key points of interdiction, capture, and intelligence gathering.

Additionally, it is possible that a bomb could be fashioned in a strong state and then be delivered by land in an ordinary van to its target in the same country. The value of such an operation would be logistical, such as the availability of machine tools, a

constant power supply, stable infrastructure and transportation routes, and proximity to the target. These factors all make this type of operation an inexpensive alternative to the more frequently imagined scenario in which a terrorist would have to construct a bomb in a foreign country and then transport it to its destination target. This mode of transportation is the basis for the type of interdiction carried out under the Proliferation Security Initiative (PSI), an international effort led by the United States and designed to work within the framework of other international agreements. Further, studies of the relative cost of past terrorist operations have shown that terrorists have an interest in maximizing the “number of kills-to-dollar” ratio of their activities, and that, in their calculations, the use of nuclear weapons is a relatively cheap endeavor to achieve their aims.

The panel observed that high-value terrorist targets, such as those hit in Europe and the United States, could reduce the desire of terrorists to produce mass casualties with nuclear weapons. Terrorists could instead create significant damage by striking at infrastructure targets, with widespread economic disruption as the intended consequence. Nevertheless, most agreed that the symbolic value of a terrorist nuclear attack could be worth more to terrorists than the sheer number of casualties, due to the devastating psychological ramifications, and the political and economic consequences that would follow.

Future Research

During the discussion following the panel, key questions raised included the following:

1. Given our knowledge of the most likely sources of minimally secured fissile material, what trafficking networks would be used and which could be newly formed to transport this material to its ultimate buyer?
2. Could the mere threat of WMD use by a terrorist group prompt a strong state to react militarily to prevent the attack, thus satisfying terrorist objectives to provoke a preemptive catastrophic war or global backlash?
3. What actions could states employ in the face of such a threat by a terrorist entity other than a preemptive attack?
4. Would WFS or strong states be the preferred location for nuclear bomb construction sites and for targeting?
5. What targets would yield results that are consistent with the profiles of known terrorist groups in terms of intent and capability?

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There is broad agreement among experts that additional steps must be taken to prevent terrorists from gaining access to fissile material.

It is imperative to understand the grievances and ideologies that appear to be leading radical groups to consider employing WMD.

Acquisition and use of nuclear weapons can be perceived as a way to redress asymmetrical military imbalances and avenge perceived social injustices.

Plenary Panel #2

The Demand Side: Terrorist Networks and the Ideology of Catastrophic Terror

Moderator:

Mr. Fredrick Barton, Senior Adviser, International Security Program
The Center for Strategic and International Studies

Panelists:

Gary Ackerman, Director of Research for the National Consortium for the Study of Terrorism and the Response to Terrorism

“Motivations for Engaging in Nuclear Terrorism”

Dr. Charles D. Ferguson, Fellow for Science and Technology
Council on Foreign Relations

“The One Hundred Percent Solution to Preventing Catastrophic Nuclear Terrorism”

Dr. James J.F. Forest, Director of Terrorism Studies
United States Military Academy, West Point

“The Final Act: Ideologies of Catastrophic Terror”

Given recent developments that call into question the efficacy of the existing anti-proliferation treaty regime, there is broad agreement among experts that additional steps must be taken to prevent terrorists from gaining access to fissile material. Panelists pointed out that previous policies regarding nuclear terror have mainly addressed the supply side: ensuring high security for weapons storage and transport, limiting the production of new fissile material, constricting the availability of dual-use technologies, and reducing materials stockpiles. As critical as these security efforts are and will continue to be, experts agree that the “constellation of motivations” among terrorists is greater today than it was thirty years ago, both in the universality of their claims and the extremism of their threats. As a result, it is imperative to understand the grievances and ideologies that appear to be leading radical groups to consider employing WMD in acts of catastrophic terror, fueling the “demand side” of the equation. This is not a simple task with an obvious solution. Several different approaches emerged during the panel discussion on how to best counteract terrorist demand for nuclear weapons.

A critical first step toward understanding the “demand side” is to consider the differences between terrorists’ and nation states’ motivations for acquiring WMD, the panel asserted. A nation-state’s motivations for procuring nuclear weapons include deterrence of an external attack, compensation for real or perceived conventional military inferiority, and enhancement of international power and prestige. Terrorist motivations might include the desire to inflict mass casualties in the biggest, most original, and most impressive attack to date, to generate psychological shock or to project power and gain prestige. The centrality of the importance of prestige as a motivating factor was emphasized, as terrorist groups frequently derive power and legitimacy by appearing to redress perceived grievances. Acquisition and use of

nuclear weapons can be perceived as a way to redress asymmetrical military imbalances and avenge perceived social injustices.

Though a desire for prestige and increased power is a factor that states and terrorist groups share in their quest for nuclear weapons, states and terrorist groups diverge radically in their constituencies. States rely on the support of citizens residing in a determined geographical area, and require the integrity and 'livability' of that territory for its existence. Thus, states can mostly be expected to abide by traditional deterrence strategies and rationales: while there may be value in threats, no nation seeks mutually assured destruction. Terrorist groups, on the other hand, cannot be counted upon to behave with self interested restraint. Panelists pointed out that it would be impossible to retaliate en-masse against a group that moves among states and, if employing a radical religious ideology, answers only to a "supernatural constituency." Therefore, the threat of retaliation would likely fail to deter international terrorists from using nuclear weapons, especially those who consider suicide and martyrdom in the pursuit of their goals.

Panelists also discussed the notion that 100% disarmament by nation states would deprive terrorists of access to nuclear weapons. States are the actors with the greatest potential to construct, guard, or proliferate weapons, and the grievances that compel states and terrorists to turn to nuclear weapons do overlap somewhat. Some panelists recommended a look at the "big picture" of nuclear access and proliferation as necessary when addressing terrorist demand for nuclear weapons. However, some participants voiced concern that completely disarming states could be risky. For example, universal disarmament might exacerbate the problem in the short term by reducing retaliation options in response to attacks by non-state actors. The political risks inherent during the interim period of disarmament when states would be most vulnerable to attack might be too much for even a strong coalition of governments to attempt. There was consensus, however, that WMD acquisition by states is still the biggest current security problem. Based on that reality, terrorists could provoke a nuclear confrontation between nation states, creating an outcome that would not necessitate their own acquisition of WMD.

Eliminating demand for WMD among all states would be nearly impossible to achieve, most participants agreed. Further, at this stage, policy makers must try to understand the demand side of the equation, especially by non-state actors, and attempt to change the motivations of terrorist groups. Participants maintained that it is necessary to address the "enablers of terrorism," including those who advance ideologies ranging from nonviolent redress of local injustices to apocalyptic terrorism. Some of these ideologies are more effective at garnering support from populations than others, depending on pre-existing social conditions and religious and political appeals. Some panelists argued that the so-called "root causes" of terrorism must be examined and that the expectations, demands, and popular grievances of these groups and the social contexts from which they emerge should be addressed. Others, however, argued that even if it were possible to address the social, economic, religious, and cultural frustrations and resentments on the part of vast portions of the world's populations, this might not limit the aims of future or even present-day terrorists, whose aims are not limited to redressing historical wrongs.

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While developing ideological counter strategies is only one tool in the toolbox, this preventative approach is “under-appreciated, under-funded, and under-pursued.”

There was a divergence of opinion on the assumption of “rationality” in terrorist thinking. Regarding the utility of deterrence, some participants asked whether terrorist groups could be expected to act rationally. While some groups believe in a religious justification for their actions, they may have to rely on the financial resources and support of less extreme groups, individuals, or states which have a stake in preserving their own power, status, and territorial integrity. Similarly, participants pointed out that preventing terrorism may be more difficult than addressing social ills: if a group is committed to violence and feels justified by a shared religious ideology, the odds of de-legitimizing their ideological base are extremely low. One could, however, exploit fissures within such groups, which exist in competing branches of extremist ideology. One panelist emphasized that while developing ideological counter strategies is only one tool in the toolbox, this preventative approach is “under-appreciated, under-funded, and under-pursued.” Others wondered if these groups contemplate strategic questions or operate instead on a more emotional basis. For example, might the simple possession of WMD capability become the ultimate goal for a terrorist group because of the prestige it would carry and the leverage they could then exert to achieve their aims?

Future Research

Most conference participants agreed that there is value in attempting to change or moderate the belief systems of radicals, although there are many challenges in this approach. For instance:

1. On transforming the ideological roots of terrorism: what belief system does one offer in exchange, or how can other belief systems interact in a way that addresses the same basic concerns, in order to make attitude change sustainable?
2. Who offers this new ideology, when the messenger could discredit the message? (For example, white, Christian, American men would have little credibility in discrediting extremist Muslim ideology).
3. How does one strengthen cultural and political taboos against nuclear terrorism?

Plenary Panel #3

State, Non-State Collaboration: Case Studies - Pakistan, North Korea, Iran, and Russia

Moderator:

Dr. Hans Binnendijk, Theodore Roosevelt Chair and Director of the Center for Technology and National Security Policy, National Defense University

Panelists:

Dr. Stephen P. Cohen, Senior Fellow, Foreign Policy Studies
The Brookings Institution

“Pakistan, Terrorism, and Proliferation: Prospects and Policies”

Jon B. Wolfsthal, Fellow, International Security Program
Center for Strategic and International Studies

“Emerging Nuclear States and Possible Terrorist Acquisition of Nuclear Weapons - Iran and North Korea”

David E. Mosher, Senior Policy Analyst, The RAND Corporation

“A Historical Perspective on Converging Threats: The Case of Russia”

While the danger of nuclear weapons acquisition by nation states has been recognized for over half a century, there is a significant new threat from terrorist groups, or non-state actors, who might procure nuclear weapons. One of the easiest paths to such acquisition would be collaboration with rogue states. Potential state and non-state collaboration as an avenue to WMD proliferation was examined in the third panel through four case studies: Pakistan, Iran, North Korea, and Russia. The panelists laid out several scenarios in which these declared or emerging nuclear weapons states might become vectors of WMD proliferation to terrorists. This could happen through officially sanctioned state transfers to a non-state actor, but WMD material and/or knowledge could also be exchanged in illicit transfers, in which the donor state may not officially approve of such actions but cannot control disloyal elements within the establishment or prevent the exchange because its political or regulatory capacities are weak. The panelists also discussed the strategic ramifications of state/non-state proliferation as well as the political conditions under which such transfers might take place. An array of preventive options and best practices in counter-proliferation - including the secure storage of existing material or appealing to patriotic sentiments of national pride that could bolster scientists' loyalties - were discussed.

The most serious of the potential authorized state transfers to a non-state entity that were explored focused on the threat emanating from Pakistan, a state whose nuclear scientists became proliferators of WMD. Panelists also discussed the potential danger of Iranian sponsorship of WMD to terrorist groups, such as Hezbollah, or the threat of North Korea selling WMD materials to the highest bidder as its economic decline threatens to spark state collapse. Neither Russia nor other states in the CIS were considered as likely actors to agree to authorize transfers of WMD to non-state actors. Overall, it was agreed that if a state wanted to aid a non-state actor politi-

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Most known cases of trafficking have been discovered inadvertently.

Leakage of secrets or technical expertise in Russia and the CIS after the collapse of the Soviet Union was minimal.

cally through proliferation, it would likely do so by transferring a fully functional bomb, not parts of a bomb. However, it was deemed an extremely unlikely, although not impossible, scenario. Instead, panelists agreed that a more likely scenario is one in which a state might sell bomb-grade fissile material on the black market for cash or provide such material to a non-state actor as a tactical distraction during a geopolitical crisis.

In the case of Pakistan, participants judged it unlikely that the current or future leadership would transfer WMD as a matter of policy, but the highly fractured nature of the state opens up opportunities for nuclear proliferation by radical elements within the defense, intelligence, or nuclear establishment. This possibility will increase should the Pakistani leadership lose more control over their country. Panelists feared WMD could easily be transferred if the state institutions controlling Pakistani stockpiles of WMD were themselves divided or if the military chain of command disintegrated or became unclear. This type of scenario might also invite interference by other nations and exploitation of the situation by non-state actors.

An essential key to determining the threat of potential authorized state/non-state collaboration in WMD proliferation is an understanding of the motivations a state may have for proliferating. Iran, for instance, might want to project Islamic or Shi-ite power. If relations become more hostile, North Korea might conceivably provide WMD to paramilitaries with an anti-South Korean, American, or Japanese, agenda, or in light of its economic distress, North Korea could sell WMD materials to procure resources aimed at prolonging the survival of the regime.

Unauthorized transfers of nuclear technology or expertise become more likely as states begin to lose control over core state institutions. This is a dangerous prospect in weak and failing states with nuclear capabilities. While it is not known how much material has already been trafficked, it is certain that most known cases of trafficking have been discovered inadvertently. To date, most smugglers were caught for other criminal offenses before authorities accidentally discovered fissile materials in their possession. The inability of weak states to control their borders, pay their security or technology experts so that they are not tempted to go to the higher bidder, maintain sufficient intelligence and oversight, and investigate the sources of leakage or trafficking in fissile materials is often compounded by regime insecurity, the lack of accountability, and a poor legal process to rectify breaches of security.

Similarly, the threat of unauthorized transfers of fissile material or functional WMD to non-state actors is greatest in those countries with high levels of corruption, a lack of bureaucratic transparency, low remuneration of civil servants, high unemployment, an illegitimate monopoly on the use of force, the presence of factionalized elites, and/or fragmentation of the central government. In the case of North Korea, a strong authoritarian government poses little risk of unauthorized materials leakage due to its complete monopoly on the use of force and the fear of punishment for transgressors of state security. Consequently, the risk of unauthorized transfers would increase in the event of a breakdown in the state's authority. Despite fears of a nuclear Iran, participants agreed that Iran is more of a black box, with a lot of unknowns. However, most felt that Iran operates as a state with a strategic interest in maintaining tight security over its assets, deterring external inter-

vention and pressure, and raising its prestige and power in the region and globally. Should it develop a bomb, Iran would likely keep tight internal watch over its nuclear stockpile, but the degree to which it would comply with international inspections, enter nuclear protocols, or moderate its foreign policy behavior remains in question.

The presence of significant quantities of minimally secured stocks of fissile material that exist in Russia and the CIS adds greatly to the threat of unauthorized transfer and proliferation. Despite fears to the contrary, leakage of secrets or technical expertise in Russia and the CIS after the collapse of the Soviet Union was minimal. Though the breakup of the USSR was economically and bureaucratically traumatic for many nuclear scientists, there was a relatively low rate of attrition. This could be due to loyalty, a sense of professional pride, or a rising nationalism in Russia. On balance, while their proliferation continues to cause concern, countries with new nuclear programs, such as North Korea and Iran, probably would have a lower risk of leakage and have what some experts would consider “manageable” quantities of fissile material. In contrast, panelists stated that Pakistan, a politically fragmented country with a large amount of fissile material, poses a comparatively greater risk of proliferating fissile materials, technology, and expertise. To counter this threat and others like it, panelists concluded that the maintenance of robust state control of nuclear materials, and intense international cooperation should be the first line of defense in limiting proliferation to non-state actors.

Future Research

In assuming that terrorists have not yet acquired sufficient materials for the construction of a bomb, it is interesting to consider why this has not already occurred. Among questions that could be explored further, in this regard, are:

1. What barriers to the unauthorized transfer of nuclear materials and weapons have aided in the control of such activity up to now?
2. Which of these barriers are due to the deliberate policies of state control and which are incidental or circumstantial?
3. Which of these barriers or others could be strengthened in a systematic way?
4. What role does physical proximity of buyers and sellers have on the marketing of nuclear goods? (For example, minimally guarded Russian nuclear facilities are, for the most part, in quite remote or isolated locations).

While their proliferation continues to cause concern, countries with new nuclear programs, such as North Korea and Iran, probably would have a lower risk of leakage.

The maintenance of robust state control of nuclear materials, and intense international cooperation should be the first line of defense in limiting proliferation to non-state actors.

Various non-state actors, which may have access to state levers of power or WMD stockpiles, cannot be assumed to act rationally, though evidence of rational behavior is often overlooked in counter terrorism policy.

One way to reduce the terrorist nuclear option may be simply to prevent it from happening once.

Highlights of Plenary Panels

Conference participants concluded that while the degree of access to fissile materials by non-state actors is still unknown, the presence of, and desire for, that material exists and can no longer be ignored. Furthermore, as long as states maintain nuclear stockpiles, the threat of weapons diversion will exist. Non-state actors, like states, may wish to obtain WMD to boost their prestige, security, or leverage to attain specific political goals. Terrorist groups that arise from radical and loosely connected constituencies, such as Al Qaeda, are much harder to control. The pathways to proliferation through weak and failing states can occur along known smuggling routes that include drug trafficking and other transnational criminal activities, and in seemingly legitimate financial and transshipping transactions, often occurring across the national borders of strong states. Various non-state actors, which may have access to state levers of power or WMD stockpiles, cannot be *assumed* to act rationally, though evidence of rational behavior is often overlooked in counter terrorism policy. Furthermore, the structure of the “market” in WMD trafficking could provide some interesting insights, such as the tendency for terrorist groups to calculate the cost/benefit ratio of using nuclear versus conventional weapons.

Due to the nature of the nuclear materials market, experts observed that it tends to be supply driven and therefore heavily distorted. Additionally, the classic market imperfection of information asymmetry or deficit is a significant barrier to successfully connecting buyers and sellers. Buyers and sellers in this market, which may not even constitute a market at this point, simply do not know much about each other. Without any basis for familiarity, the trust underlying such transactions would be in short supply as well.

Panelists contended that seeing the potential for threat convergence in terms of a supply and demand model reveals two important factors about the market:

1. Of the incentives and disincentives to proliferate, *barriers* (see below) to proliferation have, so far, been seemingly stronger than the incentives, and;
2. The lack of knowledge about buyers and sellers on the part of these parties is a *market imperfection* that is not easily surmounted by these actors

These incentives and disincentives could form the basis of future international non-proliferation strategies and should inform future research initiatives. The incentives to proliferate in the nuclear “market” from the supply side include:

- Social and economic distress
- Ideological, cultural, or religious sympathy
- Greed
- Hatred of WMD possessing states
- Strategic geo-political opportunism coupled with a perceived lack of options
- The negative incentive of political or economic blackmail or extortion
- Rising nationalism

The disincentives and barriers to proliferate in the nuclear “market” from the supply side include:

- Geographic isolation, with its attendant lack of infrastructure and communications
- Patriotism and national pride
- Professional pride and sense of responsibility
- Difficulty of transport
- Fear of getting caught or “losing face”
- Fear of severe consequences

Participants also noted that one way to reduce the terrorist nuclear option may be simply to prevent it from happening once. The trend among terrorist groups has been to see if a tactic will work, let it gain momentum, and then spread its use. It was argued that if one terrorist group uses nuclear weapons successfully, the broader psychological barrier or threshold to future use is lowered. Moreover, an almost unthinkable new arms race among non-state actors could result from one even moderately successful use of WMD.

If one terrorist group uses nuclear weapons successfully, the broader psychological barrier or threshold to future use is lowered.

Breakout Groups

Three breakout groups were organized along the parameters laid out in the April 2006 Mapping Workshop. Participants were instructed to formulate a scenario in which terrorists obtain and detonate a nuclear bomb. The scenarios and the follow-on discussions are described below.

Scenario 1: A Known Terrorist Group Carrying Out a Successful WMD Attack

Facilitator: *Col. Charles Lutes*, Institute for National Strategic Studies, NDU

Scenario Summary: An Al Qaeda splinter group penetrates Iranian and Israeli intelligence and, through strategically timed misinformation provided by well-placed assets, provokes Israel into targeting Iran with Jericho missiles armed with nuclear warheads.

Scenario: In approximately three years, the civil war in Iraq has forced the withdrawal of U.S.-led forces and Iran is openly supporting ascendant Shi'a politicians and militias. Sunni factions are facing defeat and Israel, feeling isolated in the region, is unsure of Iran's nuclear intentions and increasingly insecure over its rise in the region. The anti-Shi'a, Sunni, Salafist Jihadis, potentially identified as the Mujahideen Shura Council in Iraq (MSCiI), want to tip the balance of power in the region with the ultimate goal of dominating Iraq and establishing it as the center of an eventual Sunni caliphate. To achieve this goal, they conduct a psychological operations campaign against both Iran and Israel by setting up a series of false threat perceptions in the minds of Israelis and Iranians. Using proxies to pass misinformation and falsified documents to Israel, terrorists infiltrate and target members of the Mujahideen e Kulk (MEK) group, which have a history of selling intelligence to the U.S. The terrorists then plant the idea that Iran is close to completion of a small, tactile nuclear weapon, goading Israel to assume that Iran might give it to Hezbollah. They might also plant the idea that when Hezbollah pulls back from Israel's border, this is a signal that a nuclear attack is imminent. Under this scenario, Sunni terrorists could, at a very low cost and with little risk to them, hurt or eliminate two enemies at once.

Scenario 2: State – Non-State Collaboration Leading to an Act of WMD Terror

Facilitator: *Philipp Bleek*, Georgetown University

Scenario Summary: The Muslim Brotherhood contacts a faction within the Pakistani government to procure a weapon from within Pakistan and then transport and detonate it in Riyadh, Saudi Arabia in order to topple the House of Saud.

Scenario: In a future faltering Pakistan, beset with insecurity over India's burgeoning relationship with the U.S., including nuclear cooperation, and a lack of stability or progress over Afghanistan and Kashmir, the Pakistani government has been building its nuclear arsenal. A

radical faction from within the Pakistani government, potentially an entity overlapping the nuclear establishment and the Inter Services Intelligence (ISI), is further radicalized by the Muslim Brotherhood and recruited to aid in the operation. This small but powerful group works from within the government to secure a bomb or bomb-grade fissile material and fashion a WMD. They collaborate with a number of different groups, such as a madrassa alumni network, individuals in the shipping and trade industry, and international financial institutions, to transport the weapon to Saudi Arabia, using Dubai as a transit and logistics hub. The weapon is placed on a small aircraft or ship to Saudi Arabia to be transferred to a small aircraft. The bomb is flown to its target just over Riyadh, during a festival or meeting of the royal family, in order to produce the largest political impact possible and destroy the monarchy. After the bomb is dropped, the Muslim Brotherhood seizes control in Saudi Arabia and establishes a model caliphate in the greater Middle East and Muslim world.

Scenario 3: Unknown or Not Yet Existing Terrorist Group Carrying Out a Successful WMD Attack

Facilitator: *Raphael Perl*, Congressional Research Service

Scenario Summary: Sunni Jihadis procure a nuclear explosive device from Russia and use it to attack a symbolic Shi'a site in an effort to ignite further sectarian violence across the broader Middle East.

Scenario: Over the next several years, Sunni Arab insurgents from Iraq form a new terrorist group based on shared political isolation, religious piety, and anger at Iranian meddling in Iraq. This newly formed terrorist group perceives the regional Shi'a community to be the cause of its marginalization, and seeks a nuclear weapon with the goal of using it to increase the global dimensions of what they view as a Shi'a/ Sunni historic sectarian showdown. Purchased with money from a booming Iraqi oil smuggling industry, the group procures a never-inventoried, small tactical weapon from Russia using its former Baa'thist—KGB connections from the Saddam Hussein/Soviet eras. The weapon is transported through existing criminal contacts and smuggling routes from the ungoverned spaces of the North Caucasus, through Georgia, eastern Turkey, Syria, and Sunni dominated Al-Anbar province in Iraq. The weapon is detonated in a mosque in Karbala, a city of historical religious significance for Shi'as, with the desired effect of provoking regional, if not global, sectarian war.

Evaluation of Scenarios

The scenario building exercise was an attempt to explore new ways in which the supply and demand sides of nuclear terrorism might operate in the future and highlight the importance of novel ways of thinking about these threats. A vote was held to determine conference participants' opinion on the likelihood of the three scenarios. The vote resulted in Scenario 3 being the most credible and likely to occur in the judgment of the experts. Their reasoning was that this scenario utilized specific, known routes for purchase and smuggling of fissile material or WMD and depended less on a remarkable convergence of circumstances, serendipity, or future political context. The participants also agreed that all three scenarios included a number of difficulties. None seemed likely to occur in reality, but none were impossible either.

In examining all scenarios, from the supply side of the equation, the breakout groups determined that the chance of success depended on many factors, and that any one plan is only as strong as its weakest point. Terrorist groups could be foiled in their quest for WMD by intentional scams by trusted contacts, as happened in the only known case of an Al Qaeda operative purchasing fake material, or if they unintentionally purchased old or malfunctioning weapons. Terrorists could likewise fail, of course, if the material or bomb is discovered in transit, or by the sheer difficulty of moving such materials through ungoverned spaces, many of which are often beset with violent conflict and brutal criminals.

On the demand side, and in exploring terrorist motivations, Scenario 3 was rated most likely to occur because, although the terrorist group was formed at a future date, the motivations cited for its activities were well-established and followed historical and current trends of known terrorist groups. Debate that arose during the breakout sessions highlighted the current national and international tendency to mainly consider known weaknesses in the security and supply of materials or weapons and allow those considerations to determine both the motivations and identities of as-of-yet-unknown groups. Moreover, participants stated that the focus on known terrorist elements and motivations is due, in part, to the predominance of a counter-terrorism lens that already implies that interdiction is the primary means of prevention. Instead, a comprehensive examination of potential motivations of non-state actors and the resources available to them should be employed. For instance, participants suggested areas of investigation that should be considered, such as:

1. What political changes could lessen or affect the desire for WMD on the part of terrorists, the likely targets, and the probability of success?
2. What are the basic political and economic conditions that could enable these scenarios to be played out?
3. Should policy makers and law enforcement officials focus on the "brokers," that is, the known criminal organizations and smuggling routes rather than potential buyers and sellers of WMD?
4. What are the consequences of maintaining too narrow a focus on Sunni, Salafist, or Jihadist intent on fomenting sectarian war and toppling so-called "apostate" regimes in the greater Middle East, and conducting international terrorist war on the West, while ignoring new groups with similar agendas?

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Conclusion

Throughout the two day conference, participants stressed that by exploring the *relationships and networks* necessary to accomplish an act of nuclear terrorism, researchers may be able to determine the most likely sources of fissile material, potential targets, the necessary components of a bomb's manufacture, as well as groups capable and determined to acquire WMD. Further, they concluded that these relationships might not follow known patterns. Thus, researchers must be concerned with novel approaches to studying their subjects. To this end, the following questions were conceived with the aim of developing hypotheses to suggest future directions.

1. Given knowledge of the whereabouts of the most likely sources of minimally secured fissile material, what existing or newly formed trafficking networks would be used to transport this material to its ultimate buyer?
2. If we are to assume that sufficient materials for the construction of a bomb have not yet leaked or been acquired by terrorists, why hasn't it happened?
3. What barriers to the unauthorized transfer of nuclear materials and weapons have aided in the control of such activity up to now?
4. Which of these and additional barriers could be strengthened in a systematic way?
5. Should policy makers and law enforcement officials focus on the brokers and the pipelines, the known criminal organizations and smuggling routes, rather than potential buyers and sellers of WMD?
6. What conditions exhibited by WFS pose the most significant risk of aiding in threat convergence scenarios?

For the purpose of counter proliferation measures, one panelist contended that the international community should aim to confuse buyers and sellers, keeping them in the dark about potential resources. They should also maintain surveillance, cultivate distrust of once-trusted intermediaries who are known to law enforcement, and conduct sting operations and strategic disinformation campaigns.

Other participants suggested that strengthening the capabilities of governments, specifically the permanent five UN Security Council members and nuclear weapons states, and counter proliferation agencies, such as the IAEA, would do much to ensure that states do not transfer their own nuclear materials. In lieu of definite improvements in the attribution capacities of the international community, the *perception* of that capability must be enhanced so that proliferators are on notice that they will be exposed and isolated. If potential proliferating states believe that they will be punished when materials confiscated from non-state actors are shown to have originated in their state, this could become a deterrent to close gaps in the current non-proliferation regime.

Finally, in order to assess the likelihood of new threats emerging along both known and wholly unanticipated lines, current security weaknesses, group grievances, and terrorist motivations must be scrutinized. To this end, experts, governments, and international and regional organizations should consider new strategies to contain proliferation from weak or rogue states and act against both known and likely routes for terrorist WMD acquisition. This will require a significantly higher degree of

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cooperation and intelligence sharing. In addition to improving coordination on tactics and polices aimed at addressing the supply side of WMD proliferation, new thinking needs to be generated on the demand side, including on terrorist motivations and countervailing ideologies that would dissuade potential groups to commit an act of catastrophic terror.

Only through such a systematic and comprehensive approach that considers the factors fueling both the supply and demand side of the equation, the motivations and means driving potential state and non-state actors to acquire WMD, and the intermediate routes of transmission and delivery to their intended targets, can the potential catastrophic consequences of threat convergence be properly thwarted.

List of Participants

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