

Stanton Nuclear Security Fellows Seminar

Panel 5: Governance and Supplies

1. **Emma Belcher**, CFR: *Nuclear Smuggling: Crime and Punishment*

One way to prevent nuclear terrorism is to ensure that nonstate actors do not acquire fissile material—the critical ingredient for a bomb. However, there are smugglers willing to sell this material, and groups seeking to buy. Preventing fissile material from falling into the wrong hands requires that potential nuclear smugglers are deterred, through criminal codes that take nuclear crimes seriously. Through this project, I assess the strength of the international community's regime to combat smuggling, by analyzing important states' laws and comparing them, where applicable, with their enforcement record. I examine known nuclear smuggling cases, and posit reasons for the status quo. I conclude with policy prescriptions for strengthening the norm against nuclear smuggling.

This research project is derived from President Barack Obama's stated goal of securing all vulnerable nuclear material within four years. Although ambitious, this goal is essential for preventing nuclear terrorism. Fissile material is the crucial ingredient for a nuclear weapon, without which nonstate actors could not manufacture even a crude device. However, securing known materials at their sites is not the only important aspect of preventing nuclear terrorism—preventing the sale of material that might exist outside known facilities is also imperative. The Soviet Union was notoriously weak in accounting for its fissile material and, in the chaos that surrounded its demise, the international community does not have an accurate picture of how much material might have been stolen or otherwise diverted for nefarious purposes. It is possible that some dangerous sources are held outside state facilities by those who might one day seek to benefit financially from their sale, with little regard for the consequences. For this reason, it is important to focus on preventing the smuggling of these materials.

This prompts the question—how strong is the regime to prevent nuclear smuggling?

To answer this question, I examine the nuclear smuggling laws of states that have particular significance for the anti-smuggling regime. I take a number of indicators into account when I isolate the most important states for deeper investigation. These include states that: possess nuclear weapons; have a civil nuclear industry; maintain significant quantities of highly enriched uranium on their territories; have experienced cases of nuclear smuggling-related activities on their territories; and had citizens involved in nuclear crimes, including the AQ Khan black-market network.

To determine the laws of these states, I draw on the United Nations Security Council Resolution 1540 database, which provides legislative and regulatory details of states' laws, according to their Resolution 1540 obligations. For the nuclear smuggling cases, I draw on the International

Atomic Energy Agency's Illicit Trafficking Database; the Center for Nonproliferation Studies overview of confirmed Proliferation-Significant Incidents of Fissile Material Trafficking in the NIS, 1991-2007; and a case study of University of Salzburg's Database on Nuclear Smuggling, Theft and Orphan Radiological Sources (DSTO) incidents between 2001 and 2005.

I conduct a qualitative case study of Georgia, which has reported several cases in the last decade. I examine the circumstances of these cases, and the motivations of those involved. I examine Georgia's response to these cases, as well as its cooperative efforts with the U.S. State Department's Nuclear Smuggling Outreach Initiative (NSOI).

I also examine the possibility of convergence of nuclear smuggling with other transnational criminal networks, such as drug smuggling or human trafficking. While it is difficult to know how much convergence there is between nuclear smuggling and other forms of organized crime, states are discovering an increasing number of cases that display this convergence. I incorporate this into my analysis of potential routes for terrorist exploitation.

My preliminary findings indicate that there are some serious weaknesses in the regime to prevent nuclear smuggling. While most states have legislation that prevents unauthorized possession, not every state has legislation that covers all forms of nuclear crime, such as hoaxes or scams. Of the penalties that do exist, some are little more than a slap on the wrist (such as a few years) and do little to deter the crime. Moreover, enforcement in some states is lax—as little as a few months of a several-year sentence. This lack of jail time sends a dangerous signal that aiding proliferation is not viewed as a serious crime.

This is most prominent in Eastern Europe and Central Asia and the Caucasus, where sources of weapon-grade material are most concentrated, and where other forms of organized crime exist. Reasons for this vary, including a lack of capacity to enact legislation and relevant regulations, and a lack of political priority accorded to nuclear security.

My policy prescriptions are that states must work together to increase the penalty for all forms of nuclear smuggling, including small quantities and scams. This is because trafficking in small amounts can be test runs for larger quantities, and scams bolster the impression that there is money to be made in the trafficking game. They also waste valuable government resources for combating real cases. Moreover, those involved in scams could one day graduate to trafficking in real material. States must increase penalties in a highly public manner, to affect smugglers' risk-reward gamble. The NSOI is working with individual states to this end, but additional resources must be allocated as a matter of priority.

Furthermore, states must impose universally harsh penalties. If they do not make penalties meaningful across the board, proliferators will exploit jurisdictional weakness as they seek out alternative routes, undermining the good work to date. While it is not appropriate to impose U.S. standard penalties in other jurisdictions, the international community should agree upon meaningful minimum standards and commit to enforcement, if it's to have any hope of

curtailing nuclear crime. I propose that an eight- to ten-year minimum for the lowest nuclear smuggling offense would be a good start.

2. **Jonathan Pearl**, CFR: *Responses to Proliferation: Explaining the Wide Variation in How Nuclear Suppliers Respond to Potential or Actual Cases of Weapons Proliferation*

Conventional wisdom holds that nuclear proliferation presents an existential threat to international peace and security and, ultimately, to human survival. Yet there has historically been considerable variation in states' nonproliferation preferences. This variation in preferences has in some cases impeded efforts to halt proliferation and in others facilitated the spread of nuclear weapons. My comparative study of nuclear supplier behavior aims to explain why states' proliferation preferences vary so widely and to draw lessons from this variation to inform future nonproliferation efforts.

Research Question and its Significance

Why do nuclear suppliers vary in their responses to potential or ongoing proliferation by other states? Although policymakers often speak about the dangers of nuclear proliferation, almost every nuclear weapon state has been aided in its acquisition of these weapons by some combination of foreign assistance and international forbearance. This gap between rhetoric and actions is paradoxical.

Indeed, only in the rarest of cases have states taken decisive nonproliferation measures such as imposing sanctions or launching military strikes against suspected proliferators. Far more often, they have adopted policies of relative inaction in the face of suspicious activities. In some cases, nuclear supplier states have essentially facilitated proliferation through technology and, allegedly, weapons design transfers.

Current research on nuclear proliferation cannot explain this variation in state responses to proliferation. To be sure, scholars have reinvigorated the study of nuclear supplier behavior over the past few years, paying particular attention to strategic drivers of nuclear cooperation, but the literature as a whole focuses narrowly on the causes and consequences of supplier decisions to engage in nuclear cooperation. In so doing, it fails to explain how suppliers choose from among the full range of options available to them—from transferring weapons designs to launching military strikes. My research aims to fill this gap in the literature and to enhance our understanding of why states so often disagree about how to handle proliferation.

Methodology

Core Argument

I argue that two factors explain the wide variation in state responses to ongoing or potential cases of state-level proliferation: threat perception and strategic space. The more threatening a state finds a particular case of proliferation, the more likely it will be to support aggressive measures to prevent or reverse that third party's nuclear development. Where third-party

proliferation is viewed as an existential threat, states will seriously entertain taking military action.

Yet states cannot always act on their fears because their ability to do so is conditioned by their strategic environment. A lack of needed military capability can constrain a state's policymakers from choosing military action, even though this is their preferred option. Similarly, policy considerations with respect to the larger strategic context can make aggressive nonproliferation efforts strategically undesirable, for example, because they would risk alienating a strategic partner and strengthening an adversary.

Focusing on Nuclear Suppliers

To explain the phenomenon under consideration, my research focuses specifically on the behavior of nuclear supplier states and their responses to actual or potential state-level proliferation. I focus on nuclear suppliers for two reasons. First, these states are in a material position to provide nuclear technology and benefit from such trade. Second, included within this group are the leading states in the international system; leading states are the state actors with the greatest political and military leverage to oppose proliferation should they so desire, and they are the most likely to be affected by shifts in the international balance of power that can accompany nuclear proliferation. In short, the group of nuclear suppliers contains states that are theoretically capable of choosing from among the full range of potential options when responding to a case of actual or potential proliferation.

Comparative Case Study

My project employs a comparative case study approach to explaining nuclear supplier behavior. In particular, I examine the behavior of three major suppliers—the United States, France, and Russia—each of which has exhibited very different responses to proliferation across time and space. My case studies, however, are organized around three specific cases of proliferation: Israel, Pakistan, and Iraq. In each case, I compare these suppliers' reactions to proliferation activities in one of these states, utilizing the method of structured, focused comparison. I am collecting relevant information for this comparison from a combination of secondary sources, primary source documents, and interviews.

What I Have Learned to Date

My historical case studies help to illustrate the variation in state responses to proliferation across time and space. In the late 1950s and early 1960s, for example, France supplied Israel with plutonium reprocessing technology and, allegedly, a bomb design. It is widely believed that France delivered this assistance at least in part for strategic gain, and having just partnered with Israel in the Suez War, France appeared to view Israel more as a strategic ally than as a strategic threat. At the same time, the United States held strong concerns about French-Israeli cooperation; indeed, the Kennedy administration went so far as to threaten the bilateral

relationship. Yet Washington ultimately did little to prevent Israel from acquiring the bomb despite having the diplomatic and military power to do so. Instead, the United States increased its military and economic cooperation with Jerusalem. It is not difficult to understand why this cooperation continued given the fierce superpower competition for influence in the Middle East at the time, and Jerusalem's ongoing shift toward firm entrenchment in the Western bloc. Israel's shift to the West and broader regional considerations were also significant for shaping Soviet responses toward Israel, yet in the opposite direction. Given Israel's shift toward the West, Moscow stood to lose little by taking a tough approach toward Jerusalem; indeed, doing so held promise for reaping benefits in Arab capitals. It is unsurprising, therefore, that Moscow is reported to have strongly considered bombing Israel's Dimona facility during the 1967 war if certain conditions were met. Ultimately, with the US, France, and USSR at odds over how to approach Israeli nuclear ambitions, Jerusalem's program steadily advanced.

These wide divisions in approaches to proliferation seem to have continued in the 1970s and 1980s with respect to Pakistan and Iraq. Even today, such divisions continue to hamper efforts to constrain suspected nuclear malfeasance in Iran as well as to walk back North Korea's weapons program. Indeed, significant disagreement remains not only about how to handle actual or suspected cases of nuclear proliferation, but about the rules that should guide nuclear exports. The Nuclear Suppliers Group has been deadlocked for years about whether to require the Additional Protocol as a condition of nuclear supply. Proposals in the NSG to ban the transfer of enrichment and reprocessing technology to states that do not already possess them remain widely opposed by many suppliers and nuclear aspirants alike.

When I began this project, my research question was quite different. For the first several months of the fellowship year, I was seeking to explain supplier decisions to engage in sensitive nuclear cooperation with non-nuclear states, and collecting data accordingly. I slowly concluded, however, that both I and the literature were asking the wrong question. States were far less willing than I had assumed to take strong measures against proliferators, and even when some were eager to do so, the likelihood of gaining widespread agreement on how to respond to proliferators was slim. Moreover, a single state's responses to proliferation can and often did change over time, in ways that did not always correspond to parallel developments of nonproliferation laws and norms.

I am becoming more convinced as I move farther along with my research that state responses to potential or actual proliferation have ultimately been shaped by a combination of their threat perceptions and the strategic space they have had to act on their policy preferences. Ultimately, these two factors determine both how highly a state prioritizes nonproliferation measures as well as what it is willing to do to prevent it. The wide variance in threat perceptions and strategic space among states suggests avenues for promoting stronger nonproliferation cooperation in the future; however, they also suggest that there will be immense barriers to doing so.

3. **Jasper Pandza**, IISS: *The Role of Consequence Mitigation in International Efforts to Counter Nuclear and Radiological Terrorism*

Abstract

This research project explores the extent to which consequence mitigation can play a role in global efforts to reduce the risk posed by nuclear and radiological terrorism. Effective emergency response, public risk communication and decontamination can help mitigate the adverse consequences of an attack and part of this research project assesses the potential and the limitations of relevant consequence mitigation measures. Little priority is currently placed in this post-event part of nuclear and radiological counter-terrorism, despite the international benefits of more states having better consequence mitigation measures in place. International cooperation through the Global Initiative to Combat Nuclear Terrorism (GICNT) and the International Atomic Energy Agency (IAEA) could aid in the development and implementation of national mitigation capacities. Additionally, the upcoming 2012 Nuclear Security Summit could recognise consequence mitigation as a means of reducing the nuclear and radiological terrorism risk and to thus help catalyse practical changes.

Background

The 2010 Nuclear Security Summit was successful in catalysing and coordinating numerous international efforts to prevent nuclear terrorism and to recognise that physically protecting fissile materials is the most effective means to prevent an attack. While it is now clear that radiological security will receive a deserved role at the Seoul 2012 Summit, barely any international consideration has been given to improving measures that can be taken after the occurrence of a nuclear or radiological terrorist attack to minimise the likely adverse consequences. Physical material protection and other means to prevent an attack should continue to receive the highest priority, but pre-event measures can never guarantee absolute protection from nuclear and radiological attacks and therefore post-event means of reducing the risk of this unconventional terrorist threat deserve consideration.

Methodology

Drawing from the relevant specialist literature, the project's first part examines the consequence mitigation measures that are relevant to reducing the impact of a nuclear or radiological terrorist attack. The second part explores how the implementation of national consequence mitigation capabilities can be advanced through existing international programmes. This part draws from an analysis of the current nuclear security framework and from research interviews conducted with policymakers involved in the relevant initiatives and with officials of international organisations.

Findings to date

Mitigating the consequences of a radiological and nuclear terrorist attack

If emergency services are able to swiftly identify and respond to a radiological attack, if officials can issue appropriate messages to the public in a timely and consistent manner, and if affected areas can be efficiently decontaminated in the weeks after an event, then lives can be saved and much of the economic, social and psychological disruption that had been the terrorists' very aim can be significantly reduced. The impact of a radiological attack – a somewhat more likely scenario compared to a nuclear attack – is primarily economic, psychological and social. Such impact manifests over hours to weeks and therefore additional opportunities exist to minimise it.

For example, the public communication strategy by the UK Health Protection Agency (HPA) following the alleged assassination of Alexander Litvinenko shows how the wider psychological effects of a radiological incident can be reduced through an effective public information campaign. Research suggests that one reason relatively few Londoners worried about their health was that the HPA successfully communicated that the risk to public health was geographically restricted to a small number of sites. Conversely, the 1987 radiological accident of Goiania demonstrates the wider social and psychological effects that a radiological incident can provoke when measures and capacities to minimise such impact are not in place. The Goiania accident also demonstrates the decontamination challenge of a larger radiological incident. Several houses required demolition and thousands of cubic meters of contaminated soil need to be isolated for decades ahead – all following the dispersal of a disused 93 gram caesium source.

With regards to a nuclear attack, it has been estimated that thousands of casualties can be prevented if the public was aware that it is safer to shelter in a safe place for up to 48 hours to protect from radioactive fallout, rather than to attempt evacuation, even though this may seem more in line with natural instinct. Yet it would be challenging to convey this message to individuals in the fallout zone, so a public information campaign would need to be carried out in advance of a possible event. However, such pre-event communication may involve publicising capability gaps and thus influencing terrorist strategy and it may further incentivise terrorists to attempt committing a nuclear attack.

Tackling complacency and the role of consequence mitigation in nuclear security efforts

While it is clear why governments should be interested in having some nuclear or radiological terrorism consequence mitigation measures in place for themselves as a matter of domestic security policy, it may be less immediately obvious why they should be concerned that other states ought to possess a reasonable standard of mitigation capabilities. The reason is twofold. Firstly, the psychological and economic impact of a nuclear or radiological attack occurring abroad is likely to be felt across international borders, similar to the global impact of other major terrorist attacks. If the targeted state is able to mitigate some of the adverse

consequences, then the attack's impact may be felt less strongly at home. For example, if the targeted state is able to contain the spread of radiation following a radiological dispersion attack and communicate clearly to the local public whose health is and is not at risk, then the public at home is likely to worry less about their own health. A similar argument can be made for the economic impact of a radiological attack. Secondly, a single radiological or nuclear attack with wide-ranging consequences may demonstrate to other terrorist groups that such a form of terrorism may suit their own strategy, possibly incentivising them to attempt similar attacks elsewhere.

The IAEA publically recognises that many of its member states are currently not adequately prepared to respond to radiological disasters, including terrorist incidents. There appears to be a sense of complacency among states about the importance of having adequate consequence mitigation capacities in place. On the other hand, improving capacities is an enormous undertaking for every government, requiring money, research and access to expertise. Existing multilateral institutions, namely the GICNT and the IAEA can help through facilitating best practice and information sharing and through offering guidance and assistance in the implementation of mitigation measures.

In fact, one of the GICNT's official principles is a voluntary commitment for participating states to improve their capabilities to respond to and mitigate the effects of a nuclear or radiological attack. Yet this principle has not yet been acted on for political and logistical reasons. Additionally, the initiative is facing more fundamental hurdles in its efforts to help states counter nuclear and radiological terrorism and its ability to facilitate meaningful change can be questioned. The GICNT Plenary session in June 2011 provides an opportunity to revive the initiative as well as placing greater emphasis on best practice sharing on consequence mitigation measures in its upcoming activities over the next two years.

Another important opportunity is presented by the 2012 Nuclear Security Summit. Likely to be attended by heads of government from nearly 50 states, the Summit could address and help remove the complacency with which many governments have so far approached nuclear and radiological consequence mitigation and thus catalyse practical improvements in national preparedness measures. The narrow scope of the 2010 Summit was undeniably one of its key strengths and there is an opportunity cost involved in expanding that scope. However, a note in the 2012 Summit Communiqué on the importance of consequence mitigation may go a long way in facilitating practical change.

4. **David Santoro**, IISS: *Strengthening the P-5 Collective Response in Non-proliferation After Detection*

Research Question

The central question of my project is: How can we reinforce the collective role of the five permanent members of the UN Security Council (the so-called “P-5”) in addressing proliferation after it has been detected?

Background

Writing for the journal *Foreign Affairs* in the early years of the nuclear era, Fred Charles Iklé asked “After Detection—What?” A professor of political science at the Massachusetts Institute of Technology, and soon to become the director of the US Arms Control and Disarmament Agency, Iklé explained that detecting violation of a nuclear arms control agreement is crucial, but determining the consequences of a violation once it has been detected is also important. In this spirit, he described “a program to deter evasion,” but remained pessimistic about its prospects for success.

Nearly five decades later, have the predictions about non-proliferation management post-detection proved accurate? What is the track record and the situation today? Most importantly, what are the prospects for the future? In essence, looking at the past and present situations as well as to the future, what, indeed, comes “After Detection”?

When asked these questions, diplomats and national security specialists typically respond that Iklé’s pessimism has proven to be well-founded and that the situation is unlikely to improve. For starters, evidence of non-proliferation violations, which Iklé argued had to be such “as to impress the public as authoritative and impartial,” has never been clear-cut and, in fact, has over time grown increasingly complex to pinpoint.

The technical challenges associated with proliferation detection have meant that the P-5, charged with the responsibility of maintaining international peace and security, have largely been unable to agree on what proliferation is and, for that matter, on how they should respond—and at what point—to activities deemed “of proliferation concern.” Proliferation is in the first instance usually detected by means of national intelligence agencies, but even when it is thereafter confirmed by international bodies, most prominently the International Atomic Energy Agency, differences among the P-5 over how to address the problem have plagued effective action.

Seeking answers to the question of “After Detection—What?” places the P-5 at the center of the analysis. We need examine what the P-5 have done (not only in the UN Security Council, but also in other forums) to understand fully what happens after a violation of a non-proliferation agreement has been detected, including how the P-5 reach a common understanding on the

nature of the violation and its severity. It is then important to reflect on how the situation can develop in the future, and assess options for enforcement, amelioration, and other policy responses.

The analytical literature counts very few studies focused on the role of the P-5 in the international system, and very few scholars have looked at the role of the P-5 in addressing proliferation, particularly after detection.

My project, therefore, is intended to fill this gap in order to strengthen non-proliferation policy. Its main goal is to provide tangible answers to Iklé's important yet neglected question, "After Detection—What?" and to suggest how the P-5 collective response can be improved in a context in which proliferation detection is not a silver bullet.

Methodology

The starting point of this project is Fred Iklé's 1961 article which coins the fundamental arms control compliance question: "After Detection—What?"

It is also heavily based on the work done by Brad Roberts, a former research analyst currently Deputy Assistant Secretary of Defense for Nuclear and Missile Defense Policy who has studied extensively P-5 relations, notably in the shadow of the proliferation problem. In particular, the project is grounded in some of the findings of Roberts's 2001 *Nonproliferation Review* article entitled "Revisiting Fred Iklé's 1961 Question, 'After Detection—What?'" , which reviews the 1961-2001 period as it related to the arms control compliance problem (and the role of the P-5).

On that basis, I have been conducting my project through a two-pronged approach:

- One element is the drafting of an article targeted for publication in *Survival*, IISS's flagship journal. The goal of this article is to build upon Roberts's 2001 article and review the 2001-2011 period as it relates to the arms control compliance question. In other words, the article aims at answering the question "What has happened over the past ten years when it comes to arms control non-compliance?"
- The other element is the drafting of a study (targeted for publication as an *Adelphi Book*) that stands back and takes stock of the arms control compliance question and its relation with the P-5 in a more comprehensive manner.

The book will address the three following research areas:

(1) *The P-5 Mandate in Addressing Proliferation*. The book will shed light on the P-5 mandate in addressing proliferation after it has occurred so as to define a yardstick against which P-5 policies can be measured. This requires an examination of the original and evolving role of the P-5 in the international system and its connections with the non-proliferation project.

(2) *P-5 Policies in Past and Present Proliferation Crises*. The book will analyze how the P-5 have collectively responded to past and present proliferation crises and assess these responses in view of the mandate as defined above. To identify trends as to how P-5 non-proliferation policies post-detection have evolved over time, that analysis will be broken down into three time periods: the 1950s-1960s (the pre-NPT period), the 1970s-1980s (the first two decades of the NPT), and the 1990s-2000s (the post-cold war area).

(3) *Possible P-5 Policies in Future Proliferation Crises*. To make useful and actionable policy recommendations, it is necessary to make plausible projections as to how the P-5 collective response to violations of the global non-proliferation regime can develop in the coming years. After an analysis of the general policies of each of the P-5 and the national, regional, and international contexts in which they are likely to evolve over the next decade, the study will describe three scenarios for P-5 non-proliferation policies post-detection: one in which it hardly changes from the current situation, one in which it changes for the worse, and one in which it changes for the better.

The approach, therefore, is based on a strategy known in corporate and policy-making circles as the “See-Think-Draw” methodology: “See” asks the questions: What is the situation? How did it come about? “Think” asks the questions: How can it develop? What are the various possibilities? “Draw” asks the question: What can/should be done to get to the best possible future?

Findings to Date

My findings are so far limited, for two reasons. First, because I began my fellowship quite late, in November 2010. Second, and most importantly, because I have been kept busy with another major project on nuclear disarmament that I have been conducting with my colleague Tanya Ogilvie-White, another IISS Stanton Nuclear Security Fellow.

This project, which will very soon lead to a book published by the University of Georgia Press and an article published in *Survival* (that are part and parcel of the work that I am conducting as a Stanton fellow), is building upon the scholarship of the late Sir Michael Quinlan and the 2008 *Adelphi Paper* by George Perkovich and James Acton, and seeks to provide a comprehensive analysis of the political, state-level factors that are driving and stalling today’s so-called drive for “a world free of nuclear weapons.” This work has been extremely useful for my P-5 project because my specific focus has been on the disarmament diplomacy of the Five: indeed, a key question to consider when looking at the role of the P-5 in addressing proliferation is how they have reconciled their dual responsibility of maintaining “nuclear order” (notably although not exclusively through the promotion of nuclear non-proliferation) with that of moving towards greater “nuclear justice” (by making progress towards nuclear disarmament).

To date, my preliminary findings for my P-5 project are the following:

1. Iklé’s question is as relevant today as in 1961 (or 2001).

2. There are some yet few novel answers to the question of how to strengthen the P-5 role in addressing proliferation after it has been detected.
3. It is of paramount importance to go back to basics and examine the role of the P-5 in the international system, what their mandate is when it comes to addressing proliferation, and how it has evolved over time.
4. Progress cannot happen without a more in-depth understanding among the Five of what proliferation (or weaponization) actually is; although reaching a consensus definition is out of reach, working towards a more specific common appreciation of what it refers to is critical.
5. There is a role/need for track-II engagement of the Five to a) find greater agreement or common grounds on what the problem is, and b) on that basis, help identify a more specific course of action (or courses of action).