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Strategic Insights, v.6, issue 5 (August 2007)

<http://hdl.handle.net/10945/25433>

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## Over-the-Horizon Threats: WMD Proliferation 2020

Paris, France

June 28–29, 2007

*Organized by the Center for Contemporary Conflict, U.S. Naval Postgraduate School and the Fondation pour la Recherche Stratégique*

### ***Strategic Insights, Volume VI, Issue 5 (August 2007)***

by Dr. Peter R. Lavoy and Mr. Robin Walker

*Strategic Insights* is a bi-monthly electronic journal produced by the Center for Contemporary Conflict at the Naval Postgraduate School in Monterey, California. The views expressed here are those of the author(s) and do not necessarily represent the views of NPS, the Department of Defense, or the U.S. Government.

### **Introduction**

On June 28 and 29, 2007, more than 40 government officials, military officers, scholars, and security experts from ten countries gathered in Paris at a French Ministry of Foreign Affairs conference site to discuss potential over-the-horizon proliferation challenges in key countries, as well as policy measures to counter those threats.

The conference built on themes explored at *Nuclear Weapons Proliferation: 2016*, a conference held in Monterey in June 2006 with the goal of examining the conditions that most likely will influence national motivations and capabilities for acquiring nuclear weapons proliferation in the 2016 timeframe.<sup>[1]</sup> *Over-the-Horizon Threats: WMD Proliferation 2020* gathered proliferation experts to examine factors that might lead twelve countries toward or away from the decision to obtain chemical, biological, or nuclear weapons or ballistic missiles by the year 2020. Papers were also presented on chemical and biological weapons, missiles, the international nonproliferation regime, dissuasion, intelligence and interdiction, and the role of security guarantees.

The conference was organized by the Center for Contemporary Conflict (CCC) in conjunction with the Fondation pour la Recherche Stratégique and the French Ministry of Foreign Affairs, and was sponsored by the U.S. Defense Threat Reduction Agency's Advanced Systems and Concepts Office (DTRA-ASCO). A follow-on conference is scheduled for September 2007 in Singapore.

Some of the most significant findings were:

- None of the country-specific presenters predicted that their country would make the decision to develop WMD by 2020.
- In each case, a combination of factors would have to occur in order to move a country toward WMD acquisition. Those factors included an external threat, the collapse of the

- nonproliferation regime, and the rise of pro-WMD proponents (or mythmakers), which frequently arise with a regime change in the country.
- For every country examined external security threats were judged to be the most important driver of proliferation. More specifically, the presence or rise of an acute security threat in the neighborhood was viewed as the most common driver, whereas the continued (or increased) effectiveness of the global nonproliferation regime and continued confidence in external security guarantees (from the United States and other sources) would continue to premise their defense policy around conventional weapons.
  - Projected growth in worldwide nuclear power industry might create new opportunities for WMD proliferation, especially if the nonproliferation regime loses effectiveness.
  - Chemical and biological warfare programs are much easier to hide and much cheaper to start than nuclear programs. Technical knowledge and intentions are more important than capability in the modern world, with many countries possessing the ability to develop CW or BW programs very quickly should there be a government decision to do so.

The conference organizer from the CCC welcomed the presenters and attendees, and noted that while current proliferation threats understandably are met with significant concern, over-the-horizon threats receive much less attention. He explained the theory of WMD mythmakers and myths within each country, arguing that within a given country the debate over whether to begin WMD acquisition is often driven by a few key individuals, deemed mythmakers, and that following, understanding, and influencing the opinions of those key individuals can determine a country's WMD intentions. He observed that the pre-conference concept paper and authors' guidelines tasked each of the country-specific presenters to identify the people who drive the debates on weapons of mass destruction and missiles within each country and how they are driving their ideas. In addition, each presenter was asked to examine the possible external motivations and the economic feasibility and technological capabilities of each state to develop WMD. Finally, each presenter was asked to think critically on ways to counter the mythmakers' arguments in order to encourage states from refraining from developing WMD.



*Lewis Dunn, Katsuhisa Furukawa, and Robin Walker*

The sponsor from DTRA-ASCO, described his organization's mission as the U.S. government's in-house strategic thinking office charged with thinking long and deep on proliferation. He asked each presenter to think about ways to *shape* the future proliferation environment, not just *respond*

to it, and stressed his desire to take back something practical from the conference to the concerned governments. Another participant encouraged the group to look at how the existing nonproliferation tools and treaties can work better, either in the existing forms or through modification to achieve the goal we all seek: lack of proliferation of WMD.

## Keynote Address

The conference featured a keynote address by a representative from the Center for Analysis and Forecasting (Centre d'Analyse et de Prévision) at the French Ministry of Foreign Affairs, who noted that on some of the different scales of time 2020 could be just around the corner. On the national timeframe of the countries discussed at this conference, the leaders could change several times, whereas when discussing military development thirteen years is nothing. Likewise we are unable to predict when major events, such as the fall of the Berlin Wall or the terrorist attacks of September 11th will happen, and major events in the next thirteen years may drastically change our view of the proliferation environment. We need to develop and maintain a global picture of proliferation, since proliferation challenges encompass many other factors, including terrorism and other transnational threats. The world community has been unable to unite around commonly held nonproliferation values, obtain a new balance with former partners, or develop a major international strategic partnership on proliferation. He identified the two major forces currently at work as increased globalization on one hand with a return of geopolitics, including the primacy of balance-of-power and zero-sum perspectives on regional rivalries. The parameters of political, military, economic, and "soft" power have been brought into question, as has the legitimacy of the multilateral system based on the Security Council. The rules of the game and categories of international relations are changing as internal and external affairs intermingle and some non-state actors become almost as powerful as small states.

The speaker identified two ways to interpret the current WMD proliferation situation: (1) an optimistic view arguing that past predictions of increased proliferation have proven wrong, past proliferation has been mostly contained, and looking at the success of the nonproliferation treaty (NPT) and (2) the pessimistic view that proliferators are winning and the nonproliferation regime is about to collapse in the face of challenges such as North Korea, Iran, and the AQ Khan network, which he deemed the "Ikea of proliferation." In response to a question from one of the participants he identified the five most important proliferation challenges as (1) the North Korean and Iranian nuclear programs, (2) the weaknesses of the multilateral systems, including on missile proliferation and verification, (3) the legitimacy of the system combined with the perception of discrimination between nuclear and non-nuclear states, (4) the spread of science and technology in the globalized economy, including the spread of nuclear power for economic and environmental reasons, and (5) the effectiveness of counter-proliferation strategies against new networks. To meet these challenges the speaker mentioned the need to reassure non-nuclear weapons countries that they will have access to nuclear power technology, as well as the need for real counterproliferation actions, perhaps using the outline in the European Union's 2003 security framework. A key challenge for the future is to foster collective security at the global and regional levels and better cooperation within the P5 countries over energy assistance. He stressed that proliferation and disarmament cannot be considered separately. In conclusion he mentioned the need for the international to develop a lucid view of proliferation, and stated that the present situation is not a nonproliferation crossroads or a turning point, since the world is constantly at a crossroads when dealing with WMD.

During the discussion session, one participant asked the keynote speaker where disarmament fits into an integrated strategy. Another wondered whether the world really is moving toward a balance-of-power situation, noting that the last time the international world was marked by balance-of-power competition (the Cold War), proliferation challenges were handled well. One distinguishing (and worrying) characteristic of the new balance-of-power systems is significantly reduced alliance-block stability, which creates a situation the world may not be able to handle, since it has never dealt with a similar situation before. A final question also addressed balance-of-

power issues, noting their rise in East Asia, and asking how the French approach to China reflects broad strategic goals.

The speaker answered that the presence of fragmented actors in a balance-of-power world is troubling, and stated that multipolarity seems to be a bad word to the United States. However, in his view multilateral solutions are only a part of the game. He noted the challenge and importance of making China into a responsible stakeholder. He identified two faces China currently presents to the world: its traditional non-interventionist stance and its somewhat different thinking about Iran, perhaps indicating a move in the direction of intervention to achieve stability. He concluded by discussing the need to keep the arguments for nonproliferation and disarmament separate, since combining them may fuel the ambitions of potential proliferators.



*Bruno Tertrais, Pierre Levy, Peter Lavoy, David Hamon, and Kerry Kartchner*

### **Panel One: South Africa and Ukraine**

A French academic chaired the first panel and opened by stating that we need to speak about the price of defeat on WMD because we have not been able to get enough action on nonproliferation from politicians. He mentioned that the unifying factor between South Africa and Ukraine is that both used to have nuclear weapons, renounced them, but remain potential nuclear weapons states for the future.

The presenter on the South African case study stated that South Africa's government has played an international leadership role in nonproliferation, having signed and ratified most international treaties on the subject and actively pursued multilateral nonproliferation, with almost all of these actions coming since the change of government in 1994.

He noted China's increasing interest and influence in South Africa, having invested \$900 million in 2004 with trade having quadrupled in the past few years to \$55 billion. One major reason for China's interest was its need to secure uranium resources. China's increasing influence, and

desire for allies, could serve as one factor that eventually might drive South Africa toward nuclear rearmament.

South Africa is fast approaching an end to the surplus of electrical energy it can generate, and is increasingly relying on its nuclear energy program. As a country at the forefront of nuclear energy development South Africa is both in a position to export its nuclear energy expertise and supportive of other states seeking nuclear energy technology, including Iran. Many leaders in South Africa believe that support of terrorist groups should not preclude civilian nuclear energy use.

A third possible contributing factor for re-nuclearization could come from frustration over lack of progress in the global nonproliferation regime. South Africa is committed not just to nonproliferation, but also disarmament, and the speaker suggested that unless real progress is made on both fronts South Africa might, ironically, renew nuclear progress as a bargaining tool.

South Africa has a nuclear weapons legacy, the scientific, industrial, and technological infrastructure for reversion, and the resources to re-arm if it so chose. However, South Africa's transition to a constitutional democracy has instilled a strong sentiment against nuclear weapons, although the institutional memory is beginning to be lost, and the constitutional framework would have to change before it could re-arm. While some factors, specifically external security threats, may pressure South Africa towards developing WMD, the presenter argued that the chances of such an action were slim in the foreseeable future.

A French academic presented on the Ukraine, noting that it relinquished the Soviet weapons based in the country in 1994, but has not totally disarmed because, although it does not have facilities to produce weapons it still has highly enriched uranium reserves, including 13 reactors and 4 plants and have not been deprived of any nuclear technology. The Ukraine also retains the capability to produce inter-continental ballistic missiles (ICBMs) in Soviet-era plants that still do some work on Russian missiles. The government wants to demonstrate its technological prowess, strength and capacity, and to that end has plans to double nuclear energy production capability by 2030—including up to eleven new reactors—as well as plans to develop new tactical missiles. Although the Ukraine maintains the capability to produce ICBMs the government frequently states it has no intention of producing them for its own use.

Since 1994 the issue of whether to rearm has periodically reappeared in the domestic debate, the last time after the recent North Korean nuclear test. Due to the perception of serious security threats the political will on this issue has never been very strong, and the government is constantly weighing political cost of going nuclear. In the 1990s thought it would be too costly to the Ukrainian economy to maintain the weapons. Additionally, the political cost, both domestically and internationally, of maintaining the weapons would be too high.

The speaker identified some major barriers that prevent the Ukraine from developing WMD. The Ukraine does not and has never possessed the technology to control the whole fuel cycle. Currently the government is not willing to assume the cost of going against the international norm. She questioned whether the Ukraine ever truly been an aspiring nuclear power or whether it just wanted more reward for giving up nuclear weapons initially.

She concluded that the prospect of the Ukraine developing WMD is unlikely at the moment, but conceivable in a “perfect storm” worst-case scenario in the future. The likely conditions would include a more threatening Russia, increasing isolation from the world community, and a significant weakening of the nonproliferation regime. In order to ensure that the Ukraine does not develop nuclear aspirations she encouraged the major players in the global community to engage in active security discussions with Ukrainian leaders.

*Source of proliferation:* One topic raised during the discussion session was whether these two countries could present a risk as a source of proliferation, rather than (or in addition to) being the end user? The response regarding South Africa was that material slipping out is a concern, but that it is not unique in facing corruption issues. South Africa wants help countering corruption and securing uranium mines, and may become frustrated if international progress is slow.

*Ukraine's disarmament:* Another commenter noted that in 1994 Ukraine never had launch codes to the weapons stationed within its borders, and asked if those weapons ever served as a credible deterrent, and thus wondered whether the Ukraine truly regretted disarming. The presenter responded that some Ukrainian government officials do regret giving up the weapons so easily without getting more for them, and noted that the Ukraine would need financial incentives to ensure that they comply with future deals.

*Utility of nuclear weapons:* An American academic asked whether nuclear weapons will become epiphenomenal, and almost irrelevant to international security. He argued that nuclear weapons are useful add-ons for great powers, but will not help a country become a great power. They are useful if a country feels threatened by a great power, so for Pakistan they may be necessary whereas for India they are at best useful. If so this raises two issues: (1) if South Africa gets nuclear weapons, should the world care? Would it affect the international security environment? And (2) The current Iraq war has given preventive war a bad name, but is it a necessary act for great powers? Would it be a necessary act for Russia if Ukraine developed nuclear weapons?

*Successful disarmament:* One participant presenter noted that South Korea views the Ukraine as a successful case of disarmament for both donors of aid encouraging disarmament and recipients, and is trying to achieve a similar outcome to the DPRK crisis. Another presenter noted that the Ukraine does not have a very good record of following through on nonproliferation efforts, but that the Ukraine's entry into NATO has created a much better framework for discussing these issues. The Ukraine might agree with anything and not follow through, but would be more motivated if provided with a financial incentive.

*Motivations for re-armament:* An American governmental official asked about more specific motivations for South Africa to re-arm. Another official asked about the degree to which it was an actual decision in the Ukraine to disarm, since maintaining weapons was not really an option, which makes it hard to draw lessons from these cases. Additionally, South Africa is trading on the "moral credit" of having disarmed, but he questioned the real reasons for disarmament. Was it a *realpolitik* assessment, or did the white apartheid government simply not want the black successor regime to not have nuclear weapons?



*Isabelle Facon, Guillaume Schlumberger, and Noel Stott*

## **Panel Two: Turkey**

An American academic, who is looking at latent technological capabilities around the world, chaired the second panel. He noted that Turkey is an interesting case as a potential WMD aspirant because of Iran, the fragmented balance of power system, the continuing drama around entry into the European Union, and the internal dynamic on the role of Islam in politics. Could these factors lead Turkey to become an isolated country that turns to nuclear weapons in order to gain security or respect?

The presenter on the Turkish case argued that the international environment, not Islam, is the most important factor impacting Turkey's decision to develop WMD, and that while Turkey may consider nuclear weapons in the long term, the decision is unlikely in the near future. Most scholars anticipate that Turkey will go nuclear, because it sees itself (and is seen from the outside) as having a seriously deteriorating security situation, which is made bad not just because of the Iranian nuclear crisis. The Iran case is only a one factor that brings out Turkey's increasing isolation, characterized by Turkey's view that its spot in the European Union is under threat. She stated that Turkey does not have mythmakers arguing for nuclear weapons, because no debate on the subject is even allowed in Turkey. As long as Turkey is a NATO member and an ally of the United States, it does not even want to give the impression of not taking the alliance seriously; nothing else matters as long as the alliance is firm.

Despite the pending entrance in to the European Union, the current Iraq situation reinforces the need to establish/reinforce regional relationships. Relations with Syria have never been better; the two countries see eye to eye on Iraq, terrorism, and other issues. Turkey feels like it is being isolated from the United States, but in the meantime is pulling closer to Iran and Syria. Turkey does not want to openly oppose Iranian ambitions, but all decisions fall back on the quality of U.S.-Turkish relations, which will determine how Turkey will see the nuclear option. So at this point nuclear weapons are not an option, but they could be considered as a last resort if the relationship deteriorates.



Western capitalists, like the current Turkish government, give too much credit to the current economic success, but the economy is still vulnerable and could not spare resources to that kind of endeavor. Likewise, the technical capabilities do not currently exist. A handful of programs do focus on nuclear physics, but they do not have the corresponding industrial infrastructure.

For Turkey, 2020 is not tomorrow, but the day after tomorrow. Turkey is in need of energy, and a strong debate exists on how to get energy. The Turkish government has lost credibility because of poor energy planning. Changes in the international system are forcing Turkey to review its isolationist stance, but isolation cannot be remedied by obtaining nuclear weapons.

Discussion regarding Turkey included whether these two crises affected the view of the collective security guarantee, and what the implications were for other regimes regarding the importance of alliance structure. It has long been a free good, as we look forward the existing regime needs to be fed and watered. One attendee wondered whether one could take South Africa or Turkey as a pilot case for nuclear energy without providing enrichment and reprocessing technology, since the international community needs to avoid the Starbucks approach, with a reprocessing facility on every corner. A final discussion surrounded whether Turkey perceives itself as having a national security crisis, and where threats will come from once they no longer have NATO or the EU to fall back on.

### **Panel Three: Saudi Arabia and the Gulf Coast Countries**

Another presenter stated that Saudi Arabia and Egypt are two of the most important countries to consider as WMD aspirants, particularly as Iran moves towards nuclear weapons. The overall trend is of Middle East states moving away from renunciation of nuclear policy and towards a more ambiguous hedging posture. Over the last twelve to sixteen months a wave of proliferation of nuclear technology has spilled before our eyes. The danger in this is that once a country gets an infrastructure in place is in a far better position to become a latent nuclear power that can get weapons quickly if they want them. Many of these states recently took the first steps toward a WMD program, including Algeria, Morocco, Egypt, and Jordan. Although the prevailing wisdom in the United States is that we should not be concerned with nuclear energy in Saudi Arabia, if the United States has the ambition of controlling proliferation it cannot afford not to take it seriously. Contractors do a lot of Saudi security work, so WMD work could potentially be similarly outsourced to Russians, or other experts.

Saudi Arabia has to be considered in context of all of these states considering their postures. The realist framework argues that each state is continuously searching for power and security, and for the propensity of states like Saudi to outsource strategic aspects of security to the United States with little domestic political consequences. However, the United States' political influence and military power is declining, so regional states are less confident of it after Iraq. Militias present direct challenges to the state system and tribal organization of these countries, and Iran's successful defiance of the United States may lead Middle Eastern countries to seek new sources of security. Oil producers especially are in the process of building new political and economic relationships separate from the United States. The populations in many Middle Eastern countries are very anti-U.S. and -Israeli, and often fail to see the difference between the two.

All of this does not indicate a certainty of seeking or achieving a fully weaponized capability. Scholars or policymakers would be hard-pressed to think of more rational decision-makers than the Saudis, so they are unlikely to go the full step of weaponizing, but they may develop partial programs just in case. It would be a mistake to dismiss the possibility that the Saudis would hire Russians to set up reactors if they thought it necessary.

The discussion noted how unpredictable the region is due to the war in Iraq. If the Saudis or another Middle Eastern country did manage to obtain nuclear technology it might be difficult or

impossible to recover. The Saudi regime is currently very stable and the house of Saud is well entrenched, but the next generation of leaders after Abdullah and Sultan might be less inclined to maintain a close alliance with the United States. Another presenter asked whether the United States can prevent proliferation while completely supporting Israel. A final commenter stated that a balance of power situation in the Middle East creates a security dilemma, with everyone becoming more insecure if it accelerates. The presenter noted that the Saudi interest in nuclear weapons and balance of power situation could be a blip, with the region returning to the status quo in the next ten years or so. He also pointed out that Saudi Arabia has lived under an Israeli nuclear threat for decades, so the continued support from the United States is not really an issue.



*James Russell, Kerry Kartchner, and James Wirtz*

#### **Panel Four: Argentina, Brazil, and Venezuela**

An American academic presented the case for possible proliferation by Argentina, Brazil, or Venezuela, pointing out that all have been considered potential nuclear proliferators for many years, but that in the 1990s that risk declined. At present, Brazil and Argentina have a high capability but a low incentive to develop nuclear weapons, whereas Venezuela has a low capability but a high potential incentive.

She briefly described the history of the nuclear programs in each country, but focusing on Brazil and Argentina. In the 1950s under Peron and Vargas both were inward looking regimes that rejected free trade and pursued nuclear capability including development of centrifuges. In both cases the leaders were interested in nuclear technology partly to maintain power, demonstrating that domestic politics often have an international reference. In the 1960s and 1970s the focus was on retaining inward-looking nationalism and deepening fuel cycle capabilities. The 1980s was characterized by a focus on economic heterodoxy, and a transition to democracy, but both countries retained a level of nuclear ambiguity. This trend reversed in the 1990s when both countries explicitly decided to denuclearize.

The post-2000 situation in Brazil and Argentina has been characterized as hybrid approaches, with each government renouncing nuclear programs, but maintaining some capability. While Argentina's Kirchner has kept military at arm's length, it has not signed the additional protocol, and Brazil resisted the annual inspection of its facilities in 2004.

In Venezuela President Chavez is trying to follow the populist movement of Peron, and the country's oil windfall has allowed him to make strategic decisions. He wants to ensure that Venezuela can be independent of the West, and aligned himself with Iraq (before the United States attack) under the guise of needing protection from an invasion or attack by the United States.

Despite the rise of Brazil over the past decade, Argentina has not felt threatened and made the decision to attempt to match Brazil in its pursuit of nuclear weapons. In fact, although bilateral tensions are high, the alliance between the two countries stands out. However, continued corruption could push these hybrid coalitions over the nuclear threshold, resulting in some very interesting over-the-horizon possibilities.

Discussion topics included the fledgling Brazilian space program, specifically whether Brazil could use its space program to gain respect in lieu of a nuclear program, and whether that would be a nonproliferation issue. One participant challenged all the presenters to be bolder in their predictions and identify what factors would make Brazil or Argentina reconsider. One commenter argued that it was not democratization but the country transitioning to look outward that brought about the reversal of nuclear policy in these countries, and he wondered what tools could encourage a country to look outward.



*Etel Solingen and Neil Joeck*

## **Panel Five: Asian Proliferation Roundtable**

### ***Japan***

The Japanese presenter said that Japan first began considering nuclear weapons as an option in the 1960s, and that, to this day, external factors remain the main driver of Japan's perspective on

the nuclear option. While the culture in Japan is generally characterized by disgust of nuclear weapons, policymakers' thinking is more shaped by realism and the desire to avoid positioning Japan as a second-class country. As long as U.S. security guarantee is credible, Japan is unlikely to develop nuclear weapons, but the issue has been considered strongly at least five times: when China first tested nuclear weapons, during the Vietnam War, when U.S. President Nixon visited China, during the North Korean crisis in the 1990s, and following the 2006 North Korean missile test. The consistent characteristics of each situation include the Strategic and technical implications when the strategic environment shifts, but in each case the risks outweighed the value added, and the consideration was almost always reported to the United States, and resulted in a strengthening of U.S.-Japan alliance.

Technologically speaking Japan has not perfected the technology that could be applicable for controlling warhead of operational missiles and would probably take three to five years to produce a prototype small nuclear warhead with an investment of around \$2 billion. However, if it was deemed necessary Japan could probably produce a crude but effective nuclear device within a year. Japan lacks a large amount of fissile Uranium-238 and Plutonium-239, but could probably revise the core of a light water reactor. Their most practical method would probably be to create an explosive lens, a task within their existing technological capability, but they have not taken any steps in that direction. Additionally Japan's nuclear human resources are declining since nuclear energy is regarded as a losing industry and a trend of pacifism among the Japanese scientific and academic community.

The presenter argued that the real value of a nuclear weapon for Japan is in possibly sending a warning sign to China, but it's a pundits' debate that holds little water among policymakers in Japan. The conditions under which Japan might consider the nuclear option include the collapse of the international arms control regime; a perceived increase of threats; a reduction of U.S. extended deterrence; combined with a change of belief on the part of the government. One key factor that could decrease the unlikely even of a re-armed Japan would be increased knowledge about U.S. extended deterrence policy, strategy, direction, and capability.

### **South Korea**

The presenter on the Republic of Korea stated that South Korea first began a program in the wake of the Guam Doctrine (U.S. President Nixon's decision to withdraw a division from the Korean Peninsula). He listed five important determinants of South Korea's armament situation: (1) North Korean nuclear weapons lead to a temptation to develop their own weapons. Conservatives in South Korea are critical of what they view as U.S. President George W. Bush's appeasement of North Korea, while leftists are pleased with President Bush's actions but are generally inclined to be anti-United States. (2) The U.S. nuclear umbrella and overall security commitment, and especially the point and method when the United States will automatically intervene on the Peninsula. In order to be reassured, South Korea needs a firm verbal commitment from each new U.S. leader. (3) Japan's atomic energy industry, and especially what Japan does with its spent fuel, could serve as threatening signs for South Korea. (4) The regional security environment and sense of insecurity due to their unhappy history with Japan and China (he noted that Korea has been invaded by China over 900 times in their history). (5) The level of external dependence by the South Korean economy is perhaps the biggest nonproliferation driver, since South Korea does over \$640 billion worth of trade per year and is the world's sixth largest oil consumer and fifth largest oil importer. He argued that as long as South Korea remains under a capitalist government and dependent on foreign trade it would be impossible for the country to develop nuclear weapons.

He concluded that no matter how strong South Korea's nuclear power capability is, it faces overwhelming restraining factors that will prevent it from developing nuclear weapons. However, if multiple factors combine the options increase, nuclear weapons could be considered over-the-

horizon. South Korea does not have mythmakers regarding the use of military power, but they do have powerful economic mythmakers who will trump the desire to develop nuclear weapons.



*Taewoo Kim, Bernard Sitt, and Tanya Ogilvie-White*

### **Southeast Asia**

Another presenter discussed the nuclear potential of Southeast Asian countries, focusing specifically on Vietnam. In discussing why Southeast Asia should be considered an area of potential WMD proliferation, she mentioned the Bangkok Treaty, the major economic development going on in the region, and the advanced security systems, organizations, and counterterrorism operations as possible enabling factors for nuclear breakout. While little public debate exists on the issue, Indonesia, despite considerable public opposition, plans to develop a nuclear energy program by 2017, while Thailand has expressed a desire for its own nuclear energy program by 2020. Countries in the region are driven by energy the need for energy, rather than the need to hedge against threats. Vietnam and Indonesia are committed to boosting domestic confidence in the direction they are going and are moving forward with nuclear energy programs with assistance from advanced nuclear states. They have signed agreements not to use the technology for weapons, but have expressed some resistance to export controls.

The good news for the region is that it is a positive environment. The bad news is that nuclear mythmaking does exist in Southeast Asia, driven in part by frustration over a discriminatory nonproliferation regime and United Nations Security Council Resolution 1747 imposing increased sanctions on Iran.

The presenter discussed three scenarios for future WMD proliferation, but thought only one was plausible: a copycat response after a nuclear cascade in the region. If the international nonproliferation regime fails, one or more countries could hedge and develop nuclear weapons.

She mentioned the need to look at Australia's actions because potential Australian proliferation would have a large impact on the region.

In order to reduce this possibility and make the nonproliferation regime more influential the presenter argued that Australia should take the lead in proposing a new IAEA framework, to be more transparent and build confidence among other non-nuclear weapons states.

## **Burma**

The presenter on the Burmese case began by stating that Burma is a special situation because it is a closed society, with the discussion and governmental process very opaque, so it is difficult to identify either nuclear myths or mythmakers. Despite this, Burma occupies a strategic position between nuclear powers India and China and thus should be studied.

Because of the Burmese government's appalling record by government people tend to believe the worst about its intentions. Added to this is the fact that in April Burma renewed relations with North Korea, raising the possibility that North Korea could potentially hide some of its nuclear weapons in Burma in order to escape detection, although the presenter dismissed that idea. Additionally, on May 15, 2007 the regime announced that it had reached a new agreement with Russia to build a new nuclear reactor.

The Burmese regime is fairly paranoid and thinks it may face an invasion from the United States, largely due to its strategic position. The presenter argued that the world should pay some attention to Burma, but not create the problem we want to avoid by lending credence to their paranoia. He concluded that the world may be creating myths about Burma rather than nuclear myths coming from within Burma itself.

*Japanese missile defense:* Discussion topics with the Asian panel included Japan's interest in missile defense and how that links up with Japan's interest in an offensive capability. The major issue is how fast such a missile defense could be deployed. Japan views it as a tool for alliance management, but currently lacks technical capabilities for missile defense, such as GPS targeting.

*Proliferation for attention:* Another question was asked about efforts to use proliferation to get attention in the future, something North Korea has done for years. Are there any conditions under which North Korea really would give up nuclear weapons? North Koreans believe that change will result in their own death, so they are unlikely to ever truly abandon their program. Efforts to encourage them to do so would need a combination of carrots and sticks.

*Realism and nuclear myths:* Realism says countries will go nuclear when faced with an acute threat, but the reality is more complicated than that, with nuclear myths playing a major role. In Burma it is a case of subjective versus objective reality, so understanding myths is even more important in a paranoid society like Burma. No matter how frustrated they are with the situation, no country will pursue nuclear weapons just because they are dissatisfied with the nonproliferation regime.

## **Panel Six: Chemical and Biological Weapons and Missile Proliferation**

### ***Chemical and Biological Weapons***

An American presenter discussed the challenges of determining whether a country is likely to develop chemical or biological weapons (CW or BW), since both programs are largely composed of dual-use items. He stated that the important issue is not what materials actors have, but on what they know and how they may choose to use technical knowledge. Some areas of science are

advancing even faster than Moore's law governing computer speed, and the speed at which science is applied is advancing too. This accelerating rate of change combines with surprise to generate unexpected results from unexpected places, such as India. It is becoming harder to define what constitutes a chemical or biological weapon because the spectrum of options is increasing. Nature provides new possibilities for use as weapons, including emerging diseases and the manipulation of old diseases. Additionally old diseases can be recovered and potentially weaponized, as a team researching the 1918 Spanish Influenza discovered.

Life sciences is now a global enterprise and applied knowledge is the source of power and influence. There is a global competition for patents, the best students, the newest breakthrough and more. Reality is now more complicated than simply identifying countries with and without a CW or BW capability, since quite a few "innovative developing countries" have to be considered potential CW or BW proliferants.

Security implications include a more complex relationship between capabilities and intentions. Proliferation is shaped by perceptions of utility. Threats between states and terrorists may be most likely to use BW/CW, including the chlorine bombs now in use by insurgents in Iraq. Chemical or Biological weapons could be considered an option as an interim hedge for countries in an increasingly dangerous environment. An example of this is the Syrian decision to counter the nuclear capability of Israel with chemical weapons. But chemical and biological proliferation involves a much wider range of potential actors, including non-governmental threats. The saying that "we need networked responses to fight networked threats" is a mere slogan, and in order to counter CW and BW threats we need to operationalize it.



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## **Missiles**

An American presenter discussed the proliferation of missile technology. He started by mentioning the difference between unguided, short-range rockets and guided, longer-range missiles. Missiles can be either ballistic or cruise missiles, with accuracy being much more

important for the ballistic missiles, which are also unsuited for carrying chemical or biological agents.

Missiles can be propelled by either solid fuel or liquid fuel. Advances in a country's solid fuel missiles tend to go in steady increments while they progress on liquid fuel programs in quantum leaps, but he stressed that no country is currently developing its own liquid fuel for missiles and no major technological breakthroughs have occurred lately. The only major breakthrough has been in guidance, navigation, and control (GNC) with the introduction of GPS guidance, which can only increase accuracy by 20-30 percent.

In examining specific missile proliferation the presenter looked at fourteen countries in six categories. Those with long-term, sustained programs included Israel, and India, and could produce an inter-continental ballistic missile (ICBM) in ten-to-fifteen years if they chose. The second category had programs at one time, but got rid of them, and includes Brazil, Argentina, and South Africa. The third group is of states that have the technology, but have not produced missiles, including South Korea and Taiwan. The fourth group has unsuccessful programs but wants missiles, and includes Egypt, Libya, Syria, and many others. Additionally a second tier missile proliferation network exists that tries to reverse engineer missiles. Those countries include North Korea, Pakistan, and Iran. They produced exact copies of the Scud in 1994. Since North Korea is the key state in this network, if the world wants to stop missile proliferation it needs to stop North Korea.

*Future missile technological developments:* Discussion topics included technologies in development now that might change how we think about missiles, which have very little strategic use and are mainly of psychological utility at the moment. Would new missile or warhead technology change that? Would cruise missile or unmanned aerial vehicle (UAV) technology? The response was that the most significant breakthrough was the success of the Trident II missile system with 119 successful tests in a row, which is remarkable. Some miniaturization, including small ICBMs, is possible. In the next 10 years countries will probably move towards cruise missiles and possibly UAVs with the goal of making their systems smaller and more dispersible.

*CW/BW Taboo?:* Since no state has used BW or CW in a long time, has it developed a taboo with a resulting political cost? If the United States strikes against North Korea's nuclear and CW programs, what would China do? One attendee argued that a CW or BW attack could be outsourced to a non-state actor fairly easily, and the delivery could even be done fairly openly, using aerosol delivery systems for example. The knowledge issue is key, regarding export control, not just materials.

## **Panel Seven: The Nonproliferation Regime and Policy Tools**

### ***The Nonproliferation Regime***

An American discussed how to leverage the types of proliferation shocks we are going to see in order to strengthen the nonproliferation regime. He stated that many kinds of proliferation shocks exist, and that some provide potential momentum for change or opportunity to move to the middle or stimulate policy innovation. Proliferation shocks provide an opportunity for cooperation among the great powers, because the shock concentrates the mind. He stated that his accompanying paper describes eight potential types of shocks, and proposed bi-annual meetings of the secretaries of state and defense from each of the P5 countries in order to buttress habits of cooperation.

### ***Dissuasion, Intelligence, and Interdiction***



A British presenter wrote about dissuasion and interdiction with extensive focus on what can be learned from the successful actions that convinced Libya to give up its WMD program. He argued for a broad definition of dissuasion including all elements of national power that could persuade a country not to develop WMD. He discussed three questions to consider: (1) How did the broader political, security and economic context influence Libya's decision to renounce its weapons programs? (2) How did intelligence and interdiction specifically contribute to the campaign by the United States and United Kingdom to dissuade Libya from developing WMD? (3) What are the central lessons from the Libya case for dissuading current and future "states of proliferation concern?" He identified some contradictory signs that indicated that perhaps the Qadhafi regime politically wanted to give up its weapons program, but the technical aspects of the program had enough momentum that they continued. He concluded that the risks of interdiction will always have a potential for proliferation backlash.

### ***Nonproliferation Treaty Regime***

An American government official discussed the degree to which other participants are able to deter other proliferation threats. He noted that the world is helping to set clear and powerful nonproliferation norms. The nuclear nonproliferation treaty (NPT) itself is strong, clear, and powerful in the preamble, but the text of Article 6 is written in a non-specific way intended to encourage good faith negotiations. The treaty says little about fuel restrictions. The treaty has resulted in mixed successes, especially regarding Iran. Verification of Article 2 compliance has been a particular challenge for the NPT regime. The presenter argued that the most likely threat is escalation of a WMD program in response to a threat from a non-nuclear state.

## **Panel Eight: Security Guarantees**

### ***International Security Guarantees***

A French academic and policymaker stated that the challenge is to take broadest possible definition of security assurances. He argued that positive security assurances and guarantees have been a crucial and effective nonproliferation tool. Security guarantees have resulted in Japan remaining a non-nuclear weapons state. The NATO guarantee has extended beyond NATO to include countries like Sweden. Negative assurances also have a lengthy history. A strong tradition exists of non-nuclear use or threats against non-nuclear countries as well as a tradition of non-deployment on foreign soil (with NATO being the exception). North Korea is currently seeking negative security assurances from the United States in exchange for disarmament, but country specific negative security assurances have problems. He wondered why the P5 countries will not say that nuclear weapons are weapons of deterrence. He also mentioned the classic dilemma of deterrence as well as the potential downsides or ethical concerns with too strong a security commitment, and pointed out that some countries may not want to be protected by outside security guarantees.

### ***U.S. Security Guarantees***

An American presenter asked whether deterrence threats make the problem worse and whether they could be self-fulfilling prophecies. He discussed two different kinds of threats, traditional state threats where positive security assurances may be effective and non-traditional threats, including non-state actors, where emphasis should be placed less on deterrence and more on prevention, possibly including negative assurances. He asked what it would take to deter Iran, either from developing nuclear weapons or once it had them. He called for a sustained dialogue with friends and allies, arguing that extended deterrence works because of building up credibility even more than capability. If deterrence fails we have to build a different kind of security community to deal with the new problems. One of the biggest problems the world now faces is

how to deny terrorists their objectives and prevent them from attacking. He argued that security assurances involving counter-terrorism should focus on transparency and confidence building.

A U.S. policymaker asked six questions for the group to think about and discuss:

- To what extent is the U.S. nuclear arsenal relevant to security assurances? Is it our nuclear arsenal, or our willingness to use our conventional forces?
- Is there a decline in the confidence of our extended deterrence guarantees? What factors affect the strength of it? It is strange that U.S. Secretary of State Rice would go to Japan and explicitly state our security guarantee, since in the past we have not done so.
- Are great powers competing to offer security guarantees?
- To what extent do missile defenses have a role in guarantees?
- There is no such thing as a “legally binding security guarantee,” only politically binding guarantees.
- U.S. policy does not permit negative security guarantees, but was the idea of negative security guarantees crucial to passing the NPT?

Another audience member identified a contradictory debate on the issue in Japan, with concerns being expressed that decreasing U.S. ICBM forces may not be good for Japan. He asked to what extent conventional military forces could replace the U.S. military’s role. Another presenter wondered about the possibility of positive security assurances for South Korea and negative security assurances to North Korea.

A U.S. academic wondered what pluses and minuses for are deployments outside of national territory and whether those external deployments reassure the recipient country. The presenter noted that we have to be careful of our public rhetoric because we sometimes give the wrong impression on deterrence versus disarmament. He stated that we want to scare some people, but not all the people.

## Conclusion

In the concluding discussion a U.S. policymaker noted that none of the country-specific presenters predicted that their country would decide to develop WMD by 2020, which is a very different perspective than the U.S. intelligence community would be likely to predict.

Another audience member asked if someone had made proliferation predictions 25 years ago, how close would it have been to reality. Another attendee noted that former Secretary of Defense McNamara did commission such a study, which has now been declassified. However, each similar study was a self-denying prophecy, because the policymakers woke up and did something about the potential proliferators.

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## Notes

1. See conference report at: [http://www.ccc.nps.navy.mil/events/recent/NuclearWeaponsProliferation2016Jul06\\_rpt.pdf](http://www.ccc.nps.navy.mil/events/recent/NuclearWeaponsProliferation2016Jul06_rpt.pdf) and the special issue of the *Non-Proliferation Review* at <http://cns.miis.edu/pubs/npr/vol13/133toc.htm>.

