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Oliver Thränert

Proliferation and Non- State Actors

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SWP

Stiftung Wissenschaft und Politik
German Institute
for International and
Security Affairs

Ludwigkirchplatz 3-4
10719 Berlin
Phone +49 30 880 07-0
Fax +49 30 880 07-100
www.swp-berlin.org
swp@swp-berlin.org

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When discussing the current situation regarding proliferation, I would like to identify three main threats:

- Regime collapse
- Regional Conflict
- Use of WMD by non-state actors

Regime Collapse

It has often been mentioned that the Nuclear Non-Proliferation Treaty (NPT) is the cornerstone of the entire non-proliferation regime. This also includes: the Biological Weapons Convention (BWC), the Chemical Weapons Convention (CWC) and various other activities aimed at preventing proliferation, such as the Comprehensive Test Ban Treaty (CTBT), the Missile Technology Control Regime (MTCR), the Nuclear Suppliers Group (NSG) and the Australia Group (AG).

Today, the NPT is in the midst of a deep crisis. This became obvious with the failure of the 2005 NPT Review Conference, where the participants could not agree on a final document. This also happened during previous Review Conferences; however this time it became apparent that the differences between the States Parties are so acute, that surmounting them is unlikely. Many of the nuclear have-nots were deeply disappointed because the US as well as France were not willing to embrace the 13 steps of disarmament, agreed upon during the 2000 Review Conference, into the review process. In particular, Washington's apparent unwillingness to pursue the CTBT caused widespread critique. Moreover, all five official nuclear weapon states continue to modernize their nuclear arsenals and perceive their nukes as essential for their national security. This is extremely disappointing for the nuclear have-nots. The rift between the haves and the have-nots has never been deeper.

If the NPT collapses, however, the nuclear disarmament policy of the US or the other nuclear weapon states will not be the cause. Rather, the NPT's collapse is more likely to result from the nuclear weapons programs of two particular countries: North Korea and Iran. While North Korea already withdrew from the NPT and detonated a nuclear device, Iran is still a member and argues that its nuclear program is solely aimed at civilian purposes. Nevertheless Tehran did not comply with its IAEA obligations and, therefore, lost international trust and confidence. There is no conclusive evidence that Iran wants to build nuclear weapons, but as others have previously mentioned: "It

swims like a duck, it quacks like a duck, it looks like a duck, so guess what it is."

The impossibility of agreeing on a solution, that makes it clear that Tehran will not pursue nuclear weapons, could well result in the end of the NPT. A nuclear Iran, or at least an Iran that has the option to build nuclear weapons in a very short period of time, would be the second violation of a NPT member going nuclear. While a nuclear North Korea is already dangerous enough, another such example would definitely change the cost-benefit analysis of at least some non-nuclear countries. Why should these states continue to renounce nuclear weapons while not only the five official nuclear weapons states inside the NPT perceive nuclear weapons as essential for their national security, but also the group of nuclear weapon countries outside the NPT grows to five and even more states? Moreover, if the international community, including its highest authority, the UN Security Council, proves unsuccessful in stopping determined violators of the NPT, such as Iran, how can other countries in the future be convinced to comply with the NPT norms? Furthermore, why should they feel obliged to implement the modern verification procedures established through the IAEA additional protocol?

We can only guess whether an end to the NPT would really result in what is often labelled "proliferation chains". Indeed, there is the danger that particularly North Korea might hand fissile material or complete nuclear devices to third countries or even terror organization. In the past, Pjongyang already sold missiles and their components. Additionally, without the NPT, IAEA inspections would no longer be conducted, thereby resulting in a tremendous loss of transparency regarding the civilian use of nuclear energy. This would happen exactly at a time when increasingly more countries fancy the civilian use of nuclear energy and want to build not only light-water reactors but also uranium enrichment and reprocessing facilities. As a consequence, access to weapons grade material for non-state actors would become a lot easier. Many countries that used civilian nuclear energy only learned through cooperation efforts with the IAEA over time to account for their nuclear fuel material. Without any international supervision of these nuclear activities, many governments and bureaucracies might forget these skills. Therefore we would end up with more nuclear material in more countries without exact statistics about this material. If we want to prevent nuclear terrorism, this possible situation is completely undesirable.

Regional Conflict

Proliferation fatalism and deterrence optimism reinforce each other in a disturbing way. Many of those who believe proliferation is inevitable at the same time conclude that deterrence will somehow work. With this in mind, they reduce their efforts to prevent proliferation. On the contrary, it seems rather unlikely that ever more nuclear weapon states will create - as Kenneth Waltz once predicted - a world of civilized, non-belligerent and responsible countries.

In fact, nuclear weapon states may be deterred to risk a major war, but there is no guarantee that they would not be engaged in low-intensity conflict. They may even be emboldened to undertake aggression at lower levels of conflict due to the belief that escalation can be blocked by nuclear deterrence. This phenomenon is known as the stability-instability paradox. Moreover, we already know that some nuclear states are risk-accepting actors. The most obvious example is Pakistan. In the winter of 1999, following the 1998 nuclear tests, Pakistani infantry units attacked Indian-held Kashmir. This action resulted in the 1999 Kargil War, in which over 1.000 soldiers were killed on both sides before Pakistani forces withdrew. According to US and Indian intelligence information, the Pakistani military began preparing its nuclear-capable missiles for potential use during this conflict.

Furthermore, it can not be expected that Iran will become a responsible nuclear weapon state, since it does not meet the basic requirement of a stable deterrence situation, i.e. acceptance of the territorial status quo. According to several analysts Tehran is aiming at a nuclear capability in order to become a dominant regional power. Moreover, Iran is not prepared to recognize the very existence of the state of Israel. In the shadow of its nuclear capability, Tehran may foster its support to Hezbollah and other terrorist organizations, who aim at wiping Israel off the map. At the very least, Iran can be expected to do everything in its power to weaken Western influence in the Middle East.

Iran's regional ambitions are perceived as dangerous by some leading Arab countries. This is why many observers expect Saudi-Arabia and Egypt to follow suit and develop or simply buy nuclear weapons. In Egypt's case, a renewed interest in establishing a nuclear program - not necessarily for civilian purposes only - is apparent.

In any event, if yet another nuclear arms race takes place, this time in the Middle East, the respective coun-

tries are unlikely to develop comparable crisis management instruments similar to those developed by the US and the Soviet Union during the Cold War (in fact these countries only began their "nuclear learning" after the lucky outcome of the Cuban Missile Crisis). At this point in time, the establishment of a hot line or red telephone between Tehran, Tel Aviv or Jerusalem, Cairo and Riad is unimaginable. As a result, we would be faced with an unstable nuclear reality in a region full of political conflict.

In the course of such conflicts, regimes may collapse. This could provide non-state actors with the opportunity of gaining access to weapons or weapons-grade material. For instance, government structures in Pakistan are already fragile. There were three attempts to assassinate Pakistani President Musharaf, in which young Pakistani officers participated. This situation gives rise to the concern that the political orientation of Pakistan may change dramatically, maybe as a result of regional conflict. Furthermore, the fact that new rulers might come to power, who have an anti-western bias and cooperate with terrorist organizations, is worrisome.

Whether regional conflict would strengthen or weaken the Iranian regime is an open question. In the latter case, turmoil could hardly be prevented; access to weapons-grade material or even entire nuclear explosive devices might become possible. It is important to note that members of Al Qaida apparently still operate in Iran.

Use of WMD by non-state actors

There can hardly be any doubt that terrorist organizations such as Al Qaida are interested in WMD. With the acquisition of such weapons they could truly call not only the US but the entire Western world a paper tiger. The terrorists could blackmail their opponents whenever want. Many believe Al Qaida would not hesitate using nuclear weapons and furthermore, could certainly not be deterred to do so.

Fortunately, the intelligence communities believe that terrorists can not produce nuclear weapons from scratch without state support. This might not apply to "Dirty Bombs"; however, these are no nuclear weapons and the consequences of them being used is limited. Many experts argue that terrorist groups may gain the capability to muster a rudimentary nuclear device. The main hurdle nevertheless continues to be access to fissile material. If this is the case, the question is

whether terrorists could steal or get control over entire nuclear weapon systems or gain access to fissile material and then build their own bomb.

After the end of the Cold War, the US together with its partners engaged in programs to secure nuclear weapons and fissile material in the former Soviet Union. As a consequence, nuclear security conditions particularly in Russia, did improve significantly. Nuclear weapons in Russia seem to be adequately secured. This is not to say, however, that Russian nukes do not pose a problem today. Most experts believe the main danger might be well-placed insiders able to shut down alarms, bribe guards, and alter relevant paperwork. While projects such as the G-8 "Global Partnership" should be pursued, it appears that other countries are more a cause for concern than Russia.

Pakistani leaders gave important nuclear command and control responsibilities to the notorious Inter-Services Intelligence, which maintains intimate relations to both the Taliban and jihadist groups fighting in Kashmir. This is a recipe for trouble that raises the risks of a rogue faction stealing a weapon or giving it to terrorists.

Additionally, Islamabad has incredibly loose control over Pakistani nuclear scientists. A number of individual scientists met with Osama Bin Laden and discussed techniques for developing nuclear weapons. Even today, it can hardly be ruled out that Pakistani nuclear scientists working in weapons programs sympathize with Islamist terrorist groups.

The possibility exists that nuclear Iran could become another nuclear Pakistan. Tehran would be unlikely to maintain centralized control over its nuclear weapons or weapons-grade material. The Islamic Revolutionary Guard Corps recruits young "true believers", subjects them to ideological indoctrination and gives the units responsibility for securing production sites for nuclear materials. The Revolutionary Guards are known to have ties with terrorist organizations.

In any event, most observers believe that a small black market for stolen nuclear material already exists. The total for all IAEA-confirmed trafficking cases involving highly enriched uranium between 1993 and 2003 was just 8.35 kg. Even if it had all been weapons grade material and all in one shipment, this would still have been about two-thirds short of the approximate 25 kg needed for a bomb. The total amount of IAEA confirmed plutonium trafficked between 1993 and 2003 was 374.3 grams, or less than one-twelfth of the amount needed for a basic bomb. This black market

seems to be highly disorganized and there is no evidence that terrorist groups were ever involved in deals that related to significant amounts of highly enriched uranium or plutonium.

Nevertheless, this is no reason for complacency. Particularly, we should not forget that the Khan-network remained active and undetected for many years. This is the first visible example of a group selling nuclear material and know-how just to gain private profits. The whole story of A.Q. Khan is still unknown, particularly the complete list of his clients. The intelligence community believes there are at least four: Iran, Libya; and North Korea. The fourth client remains unknown.

In addition, terrorists could use chemical or biological agents. This has already happened before. The Japanese cult Aum Shinrikyo killed 11 people when it dispersed the sarin nerve agent in the Tokyo subway in March 1995. The group also experimented with biological agents, but did not succeed in doing harm. One reason was that the group used the non-virulent strain of anthrax. We know that Al Qaida also has an interest in both chemical and biological agents and hoped to manufacture botulinum toxin, salmonella and cyanide. Moreover, Al Qaida apparently wanted to cultivate anthrax as a biological weapon. But just as Aum could not find the virulent strain, Al Qaida could not procure the appropriate strain of anthrax for use as a weapon.

Following 9/11, the threat of bio-terrorism has often been exaggerated. Therefore, it seems appropriate to remind ourselves what the five essential requirements are that must be mastered in order to produce biological agents:

- One must obtain the appropriate strain of the disease pathogen;
- One must know how to handle the organism correctly;
- One must know how to grow it in a way that will produce the appropriate characteristics;
- One must know how to store the culture, and to scale-up production properly;
- One must know how to disperse the product appropriately.

As has been shown in the past, these steps are not easy to take for terrorist organizations. Therefore, many argue that for terrorists to cause harm and death, conventional arms and explosives will remain the weapons of choice, since they are easier to obtain and are much more reliable. Again, however, there is

no reason for complacency. The Life Sciences in general and biotechnology in particular are evolving rapidly and it can not be ruled out that new knowledge could be misused for hostile purposes.

One example that illustrates this point is the evolution of synthetic biology. In 2002, Eckard Wimmer, a German molecular geneticist who works in New York created a fully artificial virus in the lab for the first time. He did so by picking up the genetic code of the polio virus on the internet. Then, hundreds of tiny bits of viral DNA were purchased online and finally assembled in the lab. While the polio virus is relatively simple to re-create, other viruses such as ebola or smallpox are much more complex. Nevertheless, experts believe it is only a matter of time when it will be possible to create these viruses from scratch as well. The same technique might one day also be applicable for bacteria. The consequences might be severe. If this does occur, access to dangerous pathogens could not be prevented any longer through classical counter-measures, such as export controls or oversight of culture collections.

Prospects

Is there a cure or therapy regarding the proliferation threat? At this juncture, the picture looks bleak, to say the least. First, every effort should be taken to maintain the existing multilateral arms control agreements, in particular the NPT. Secondly, civilian defense or homeland security should be improved as well as missile defenses. Third, the "Proliferation Security Initiative" will gain more importance, as well as national implementation of arms control agreements, fostered by UNSC Resolution 1540. Fourth, as far as states possessing WMD are concerned, the main problem will be how to deter the use of these weapons. This clearly would not apply to terrorist groups. Fifth, military operations or preemption against proliferators can not be ruled out, but given the ramifications this would have, they are rather unlikely.