

Rethinking the Bomb:

Europe and Nuclear Weapons in the Twenty-First Century

Marc-Michael Blum





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Executive Summary¹

The end of the Cold War and subsequent reductions in the US and Russian nuclear arsenals have led to a situation where concerns about nuclear weapons have largely vanished from the public mindset and the political agenda. The vision of a world free of nuclear weapons, as publicly expressed by US President Barack Obama in 2009; Iran's alleged nuclear weapons programme; and concerns over nuclear proliferation have brought the issue back onto the agenda. On closer inspection it becomes apparent that Europe, and especially the European Union, lacks a nuclear strategy for the twenty-first century. This means that important questions about the role nuclear weapons can and should play to ensure Europe's security have largely remained unanswered since the end of the Cold War. While the EU is an important actor in negotiations with Iran about its alleged nuclear weapons programme and is one of the major actors in the field of nuclear non-proliferation, it has left questions about nuclear weapon use and posture almost exclusively to NATO or to direct negotiations between the US and Russia.

This paper analyses the legitimate use of nuclear weapons and identifies just a small number of extreme situations that would warrant their use. It also identifies the tradition of non-use of nuclear weapons ('the nuclear taboo') as a strong normative component in why these weapons have not seen use since the end of the Second World War and why actual use by state actors remains unlikely in the near future. The paper goes on to discuss

¹ The opinions, interpretations, conclusions, and recommendations presented in this work are those of the author. The work was created privately and is not endorsed by the author's previous or current employer.

the role of arms control. Even though nuclear use is currently unlikely, the spread of these weapons could lead to a situation where deterrence fails. It is argued that the Treaty on the Non-Proliferation of Nuclear Weapons is an imperfect tool but the best currently available in the battle against proliferation. It is important to realise that non-proliferation cannot be achieved by a handful of countries, but requires dedication and cooperation from as many countries as possible.

While multilateralism is of utmost importance, it should not be forgotten that this requires Europe to agree on a common position, not only on non-proliferation but also on nuclear weapon use in general, and that this position should then serve as the basis for talks with our key ally, the US. More communication, not only at the top but also among experts, should address some of the issues that remain as 'elephants in the room'. While both sides are aware of these issues, nobody is willing to address them. One such issue is the role of tactical nuclear weapons in Europe. It is argued that the US weapons in Europe serve more as a means of reassurance to allies than as a way to meet real military needs, and that their deterrence value is limited. It is further argued that US strategic forces could serve as a replacement for them, as it is seen as unlikely that Russia will make any substantive move towards an agreement that would limit the number of its tactical weapons. We cannot afford for this situation to continue and political barriers need to be overcome.

An analysis of the current situation regarding the Iranian nuclear programme begins by pointing out that a nuclear armed Iran is clearly unacceptable for the US, Europe and Israel. In addition to the direct threat from Iran's weapons, Iran having nuclear weapons would probably also start a nuclear arms race in the Middle East with unpredictable consequences and a significantly increased likelihood of nuclear weapons

use. While a military solution to the problem is not advocated at the moment due to unforeseeable risks and consequences, the current approach of sanctions and negotiations is favoured. Sanctions should be imposed in a way that inflicts enough economic pressure on Iran to stop its nuclear ambitions and to fully cooperate with the International Atomic Energy Agency (IAEA) as required by several UN Security Council Resolutions. It is also advocated that other regional powers, such as Saudi Arabia and the Gulf States, should become more engaged in the issue. These countries should make it publicly clear that Iran's ambitions are perceived as threats to their security and not just to that of the West.

The paper also points out that in this time of financial and political crisis in Europe the focus of political attention has shifted away from foreign policy, and especially nuclear policy. However, it concludes that putting this dialogue on hold will do more harm than good. Other actors, such as think tanks like the Centre for European Studies, are thought to have an especially important role at this time.

Keywords

Nuclear weapons – Nuclear proliferation – Threat assessment – Disarmament – Arms control – European security – NATO – Common Foreign and Security Policy – Transatlantic relations – United States – Russia – Iran

Introduction

The NATO double-track² decision of 1979 that finally led to the deployment of Pershing II intermediate-range ballistic missiles (IRBMs) and cruise missiles in Western Europe in response to the Soviet deployment of SS-20 IRBMs, and the mass protests against this policy by the peace movement in the early 1980s are certainly among the major events that come to mind when people think about nuclear weapons in Europe. In Western Germany protesters gathered for mass demonstrations on several occasions in groups of up to 500,000, but a pro-NATO rally organised by the Christian Democrat Union in June 1982 (at that time the major opposition party in the German Bundestag) also attracted more than 100,000 people. These years of high tensions between NATO and the Warsaw Pact³ were followed by the rise of the reformer Mikhail Gorbachev to the position of Secretary General of the Communist Party and the top of the Soviet Union, and the initiation of domestic reforms known as glasnost and perestroika.

The first major breakthrough between the East and the West, with a particular impact on Europe, was the ratification and entry into force of the Intermediate-Range Nuclear Forces Treaty in 1988 that eliminated all nuclear and conventional ground-launched ballistic and cruise missiles with intermediate ranges. This treaty was then followed in the early 1990s by the Strategic Arms Reduction Treaty

² NATO's reaction to the deployment of Soviet SS-20 intermediate range missiles was termed 'double-track' because it combined nuclear rearmament with an offer for immediate negotiations to ban the mid-range delivery system from Europe completely.

³ The Warsaw Pact member states included the Soviet Union, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland and Romania.

(START) between the US, Russia, Belarus, Kazakhstan and Ukraine. Under this treaty the US and Russia agreed on significant reductions to deployed nuclear warheads and delivery vehicles, while Belarus, Kazakhstan and Ukraine transferred their nuclear weapons to Russia and became non-nuclear weapons states under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).⁴ The combination of political détente between the blocs, the break-up of the Soviet Union and the subsequently improved relations with Russia meant that the immediate threat of a large-scale military conflict in Europe disappeared and the threat of nuclear weapon use became significantly smaller. While peace activists still gather in Europe to demand further or even full nuclear disarmament, the number of protestors they are able to mobilise is only a fraction of what it was in the 1980s.

Does this mean that nuclear weapons are a non-issue in Europe today? The answer to this question is not as straightforward as one may think. On the one hand, one could argue that this is true. Priorities have shifted away from a potential nuclear war between NATO and the Warsaw Pact to military engagements like the one in Afghanistan or at the Horn of Africa. One might also argue that Europe has left the initiative on nuclear weapons issues to the two major weapons states, the US and Russia, and has done very little to develop a coherent approach on nuclear weapons issues or even a 'nuclear strategy'. On the other hand Europe still actively deals with issues like nuclear proliferation and the threat posed by the Iranian nuclear programme. This paper will make the point that it is not only time for European

⁴ START was negotiated between the US and the Soviet Union. After the break-up of the latter Belarus, Kazakhstan and Ukraine became newly independent nuclear weapons states. The Lisbon Protocol, signed in 1992, made them state parties to the treaty and included a commitment by them to join the NPT as non-nuclear weapons states, a commitment fulfilled by all three.

countries to start doing more but also that the potential benefits are worth the effort. Remaining less active or even passive on these issues might result in clear damage to European security interests. It is time to ‘rethink the bomb’.

A fragmented nuclear Europe

Establishing a common voice on issues of nuclear armament in the European Union, not to mention in Europe as a whole, is difficult. It is easy to understand why this is if one takes a closer look at the different groups of countries within Europe with respect to nuclear weapons (excluding Russia and the Caucasus countries):

1. nuclear weapons states (NWSs) which are members of NATO and the EU—France⁵ and the United Kingdom;
2. non-nuclear weapons states (NNWSs) which have nuclear sharing arrangements⁶ with the US and which are members of NATO and the EU—Belgium, Germany, Italy and the Netherlands;
3. non-nuclear weapons states with nuclear sharing arrangements with the US, which are members of NATO but not of the EU—Turkey;⁷

⁵ France is not part of NATO’s nuclear planning group and its nuclear weapons are under the sole command of the French president.

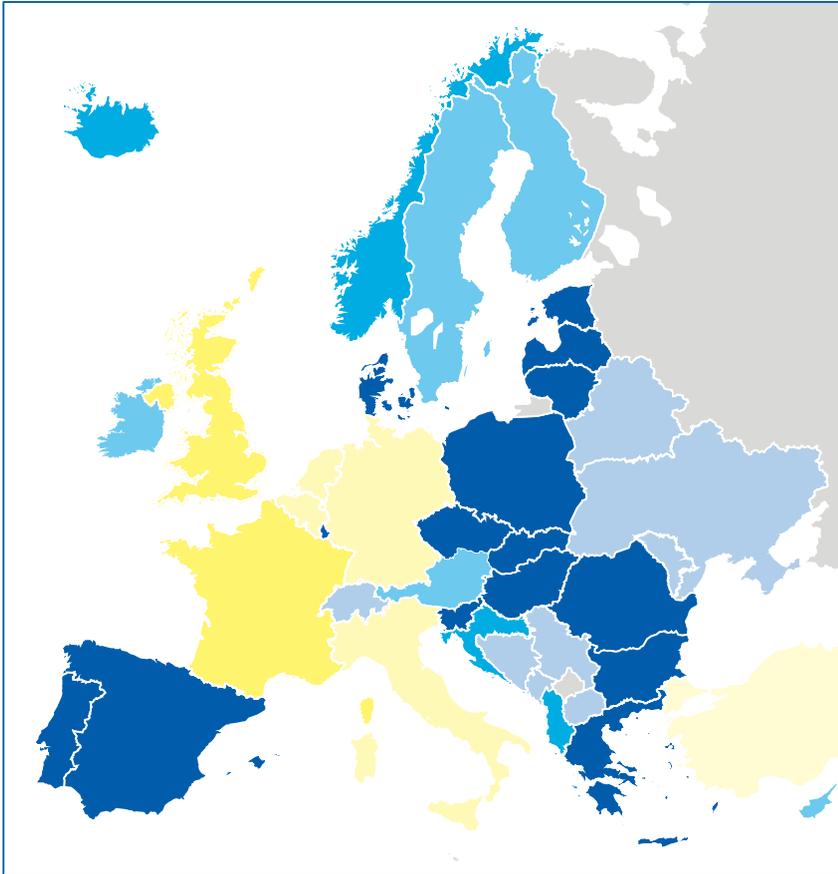
⁶ Nuclear sharing involves member countries without nuclear weapons in the planning of the use of nuclear weapons by NATO and provides for the armed forces of these countries to be involved in delivering these weapons in the event of their use.

⁷ Turkey does not currently provide Dual Capable Aircraft (DCA) able to carry nuclear weapons.

4. non-nuclear weapons states which are members of NATO and the EU—Bulgaria, the Czech Republic, Denmark, Estonia, Greece, Hungary, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania, Slovakia, Slovenia and Spain;
5. non-nuclear weapons states which are members of NATO but not of the EU—Albania, Croatia, Iceland and Norway;
6. non-nuclear weapons states which are not NATO members but are EU members—Austria, Finland, Ireland, Malta, Sweden and Cyprus;⁸
7. non-nuclear weapons states which are not NATO members or EU members—Andorra, Liechtenstein, Monaco, Kosovo, San Marino and the Vatican; and
8. non-nuclear weapons states which are not EU members but are NATO Partnership for Peace countries—Belarus, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Moldova, Montenegro, Serbia, Switzerland and Ukraine.

⁸With the exception of Cyprus, all countries are NATO Partnership for Peace countries.

Figure 1 A fragmented nuclear Europe



	●	●	●	●	●	●
Nuclear Weapons	x					
Weapons sharing		x	x			
NATO member	x	x	x	x		x
EU member	x	x		x	x	
PfP member					x*	x

* includes Malta but excludes Cyprus

Even if the above list only consisted of the two NWSs, France and the UK, and all the other states were both NATO and EU members, the situation would still be complicated. The current reality in Europe is that there are not only the two NWSs with their national interests, but also NATO members that would like to see the role of nuclear weapons reduced, and others that would prefer to maintain the status quo. In addition, several EU Member States follow a policy of non-alignment⁹ which is sometimes linked with quite pronounced demands for nuclear disarmament. This has led to the current paradox in which the EU is active in areas like nuclear non-proliferation, disarmament and export control through the Common Foreign and Security Policy (CFSP)¹⁰ while questions of nuclear use and strategy are left to NATO for discussion and decision. This is problematic, as non-proliferation and disarmament issues cannot be dealt with separately from the basic questions about nuclear use and strategy.

In order to assess Europe's current approach to nuclear issues it is important to look at both relevant NATO and EU documents. NATO released its current *Deterrence and Defence Posture Review* after the summit in Chicago in May 2012.¹¹ In this document NATO reaffirms the importance of the Alliance remaining a nuclear one for as long as nuclear weapons exist. It asserts the importance of the so-called negative security assurances given to those members of the NPT that are in good standing with their obligations under the treaty that nuclear weapons will not be used or their use be threatened against these countries. The review

⁹ Not to be confused with membership of the non-aligned movement or NAM. European non-aligned states are not members of the NAM and don't support their policy statements as a group of states.

¹⁰ B. Rhodes, 'WMD Proliferation', in B. Giegerich (Ed.), *Europe and Global Security* (Abingdon: Routledge, 2010), 149–76.

¹¹ NATO, *Deterrence and Defence Posture Review* (20 May 2012), accessed at http://www.nato.int/cps/en/natolive/official_texts_87597.htm on 13 July 2012.

mentions that NATO will seek to create the conditions for reductions of tactical nuclear weapons, but will ensure that all components of the nuclear deterrent remain 'safe, secure and effective' at the same time. A major conclusion of the review is that it '... has shown that the Alliance's nuclear force posture currently meets the criteria for an effective deterrence and defence posture.' It also reaffirmed the importance of the ballistic missile shield agreed at the NATO summit in Lisbon in 2010 and that it is neither oriented against Russia nor could it undermine the Russian strategic deterrence. What the review does not state is that there is an ongoing dispute among NATO members about the nuclear doctrine of the Alliance.¹²

The primary EU document relating to nuclear weapons is still the European Strategy against the Proliferation of Weapons of Mass Destruction (WMD),¹³ adopted in 2003 in parallel to the European Security Strategy,¹⁴ which described the proliferation of WMD as potentially the greatest threat to the EU's security. This is supplemented by a document entitled *New Lines for Action on the Implementation of the WMD Strategy*, adopted in 2008.¹⁵ The key focal points of the WMD strategy include strengthening the international system of non-proliferation, pursuing the universalisation of multilateral agreements, reinforcing strict implementation of

¹² D. Stuart, 'Introduction of European Policies and Opinions Relating to Tactical Nuclear Weapons', in T. Nichols, D. Stuart and J.D. McCausland (Eds.), *Tactical Nuclear Weapons and NATO* (US Army War College, Strategic Studies Institute, 2012), 229-234, accessed at <http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB1103.pdf> on 1 December 2012.

¹³ Council of the European Union, *EU Strategy against Proliferation of Weapons of Mass Destruction*, Document 15708/03 (10 December 2003), accessed at <http://register.consilium.europa.eu/pdf/en/03/st15/st15708.en03.pdf> on 13 July 2012.

¹⁴ Council of the European Union, *A Secure Europe in a Better World: European Security Strategy* (12 December 2003), accessed at <http://www.consilium.europa.eu/uedocs/cmsUpload/78367.pdf> on 13 July 2012.

¹⁵ Council of the European Union, *New Lines for Action by the European Union in Combating the Proliferation of Weapons of Mass Destruction and their Delivery Systems*, Document 17172/08 (17 December 2008), accessed at <http://register.consilium.europa.eu/pdf/en/08/st17/st17172.en08.pdf> on 13 July 2012.

and compliance with these agreements, close cooperation with key partners, and providing assistance to third countries.¹⁶ Since the entry into force of the Lisbon Treaty, activities related to the WMD strategy have fallen under the responsibility of the European External Action Service (EEAS).

Legitimate use of nuclear weapons

Nuclear weapons have only been used twice in combat, first in Hiroshima and then again a few days later in Nagasaki during the final stages of the Second World War. Since 1945 nuclear weapons have been part of military arsenals, but they have never been used again. However, weapon effects such as blast, heat, electromagnetic pulse and radiation are well understood due to the numerous tests conducted by the nuclear powers, and their destructive force can be predicted based on nuclear yield, the altitude of the detonation and the type of terrain affected. It is important to understand why these weapons have not been used for 67 years despite good knowledge about their (potential) performance. This understanding is crucial for identifying incidents and situations in which the use of nuclear weapons could be considered legitimate. A precise idea about what constitutes legitimate use provides a core

¹⁶ European External Action Service, *The Fight Against Proliferation of WMD*, accessed at <http://www.consilium.europa.eu/eeas/foreign-policy/non-proliferation,-disarmament-and-export-control-/wmd?lang=en> on 13 July 2012.

foundation for the development of a nuclear strategy and posture, as well as for understanding the potential limitations to significant reductions or even taking the decision to abolish these weapons.

The foremost explanation given in many texts on why nuclear weapons have not been used is deterrence. In very simplified terms this means that one's intention to use nuclear weapons is deterred by an opponent because he is either capable of denying any gains from using these weapons (deterrence by denial) or he is able to inflict higher costs than would be gained from using these weapons (deterrence by punishment). Deterrence theory is significantly more complicated and includes elements such as the presence of a severe conflict, the assumption that both actors are rational, the presence of a strong retaliatory capacity (and the survivability of this capacity in a first-strike situation), the expectation of unacceptable damage in case of retaliation, the credibility of threats of retaliation and the existence of an adversarial but stable relationship between the parties.¹⁷

While deterrence is without doubt an important contributor to non-use, there is also a social and normative component that should not be overlooked. While Brown University Professor Nina Tannenwald has stressed the normative component by calling it 'the nuclear taboo', others have preferred the somewhat weaker term 'tradition of non-use', which will be used in this paper.¹⁸ It is interesting to observe how this tradition has evolved over time. In the early years the US enjoyed a nuclear monopoly and nuclear

¹⁷ P. M. Morgan, *Deterrence Now* (Cambridge: Cambridge University Press, 2003), 42–80.

¹⁸ N. Tannenwald, *The Nuclear Taboo* (Cambridge: Cambridge University Press, 2007); S. Sagan, 'Realist Perspectives on Ethical Norms and Weapons of Mass Destruction', in S. H. Hashimi and S. P. Lee, *Ethics and Weapons of Mass Destruction: Religious and Secular Perspectives* (Cambridge: Cambridge University Press, 2003), 73–95; T. V. Paul, *The Tradition of Non-Use of Nuclear Weapons* (Stanford: Stanford University Press, 2009).

weapons use was proposed and considered several times against the Soviet Union, even after the Soviet Union tested its first weapon in 1949, and during conflicts such as the Korean War (1950–53). In this era of ‘pre-deterrence’ or ‘early deterrence’ when weapon numbers were still relatively small and nuclear bomber forces were vulnerable, one might argue that nuclear weapons lacked military utility. When General McArthur requested 20 nuclear bombs for tactical use in Korea, his request was denied by the joint chiefs of staff with the argument that there were no targets of sufficient size to require nuclear weaponry.¹⁹ Reputational considerations, as well as strong opposition from close allies such as the UK, also formed a large part of the mix of reasons not to use nuclear weapons in Korea, even after the intervention of Chinese troops. However, the build-up of nuclear forces continued and, as large amounts of financial and other resources were used to achieve this, it can hardly be argued that leaders did not see their military utility.

While the tradition was still weak in these early years it was reinforced over the following decades. The nuclear stand-off during the Cold War, with its very large numbers of deployed warheads and delivery vehicles, might suggest that only the deterrent effect of retaliation stopped the superpowers from actual use. But, at the same time, it also became increasingly accepted that nuclear weapons were to be treated as special and unique due to their immense destructive power, and could not be considered a ‘normal’ weapon for combat use. However, there has been a counter-trend to this in recent years with a proposal in the US to develop low-yield nuclear warheads to effectively attack hardened targets (a ‘bunker buster’), as well as

¹⁹ B. Cummings, ‘On the Strategy and Morality of American Nuclear Policy in Korea, 1950 to the Present’, *Social Science Japan Journal*, 1/1 (1998), 58.

certain changes in doctrine and posture such as those outlined by former French President Jacques Chirac in 2006, which listed ‘strategic supplies’ as a vital interest that might be defended using nuclear weapons. This French policy has since been withdrawn during the tenure of former President Nicolas Sarkozy. Other proposed uses for nuclear weapons include retaliation against attacks with chemical or biological weapons. While also considered as WMD, the effects of biological and chemical weapons (CB weapons) are, however, quite different and, in the case of chemical weapons, have a significantly smaller impact than nuclear weapons. As long as a response to an attack with CB weapons can be carried out using conventional means this should be done. It should also be kept in mind that those states that are still considered to have ongoing CB weapons programmes and stockpiles have markedly inferior conventional forces.

This effectively restricts the scenarios in which the active use of nuclear weapons could be considered legitimate to

1. retaliation against an attack with nuclear weapons;
2. use in the fulfilment of security guarantees after an ally has been attacked with nuclear weapons; and
3. use as a weapon ‘of last resort’ after being the subject (or an ally being the subject) of an act of aggression and being on the brink of defeat when conventional means of defence turn out to be insufficient.

Restricted legitimate use also restricts the military utility of nuclear weapons. Apart from their role as a deterrent, it is hard to envision a conflict in which nuclear weapons might be used unless relations between the current nuclear powers had deteriorated significantly. Even if this should happen, the deterrent effect of a nuclear arsenal, combined with the normative tradition of non-use, would make active use unlikely. The issue of whether certain states cannot be deterred, for example, due to religious or ideological reasons, will be discussed below.

Arms control

Arms control treaties play an important role in the history of nuclear weapons. States enter into such treaties to limit nuclear testing and areas of deployment, to establish caps on the numbers of warheads or even to provide for the reduction and abolition of warheads and delivery systems. These treaties are thought to benefit the security interests of the signatories or at least create a benefit that outweighs the potential security concerns linked with being bound to such an agreement. Arms control cannot abolish war and conflict, but it can control and limit the means by which military conflict is conducted and establish incentives to resolve conflicts in a peaceful way. Arms control should therefore never be seen as an end in itself, but as a tool to increase security and to lower risk.

Probably the most important multilateral arms control treaty is the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) signed in 1968 and extended indefinitely in 1995.²⁰ The treaty recognised five nuclear weapons states (the US, the Soviet Union, China, France and the UK; the Russian Federation assumed obligations and rights after the break-up of the Soviet Union). These states have declared that they will not proliferate nuclear weapons, weapons technology or weapons know-how to NNWSs. NNWSs are granted the right to conduct peaceful nuclear activities such as basic research or energy production (Article IV) and agree to conduct these activities under safeguards monitored by the International Atomic Energy Agency (IAEA) (Article III). Article VI of the NPT has been and still is the focus of much debate. It states that '[e]ach of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control'. This makes it the only multilateral treaty to contain a binding commitment to the goal of nuclear disarmament. Many states, especially those from the Non-Aligned Movement, have repeatedly attacked the NWSs for not living up to the requirements imposed by Article VI, and this argument has also been used by nations as an argument for not joining the Additional Protocol on extended safeguards. Interpretation of the language in Article VI is difficult and the provisions of Article IV, which basically allow unrestricted peaceful nuclear activities, make it difficult to control and restrict uranium enrichment

²⁰ United Nations Office for Disarmament Affairs (UNODA), *Treaty on the Non-Proliferation of Nuclear Weapons* (NPT), accessed at <http://www.un.org/disarmament/WMD/Nuclear/NPTtext.shtml> on 1 December 2012.

and fuel reprocessing, which can be used to produce weapons-capable fissile materials.²¹ The treaty also does not make any provisions regarding uranium mining and ore processing.

Even though the NPT contains flaws and is far from perfect, it is the best (and only) multilateral nuclear non-proliferation treaty we have, and there are no expectations that anything better waits around the corner. The undeniable success of the NPT must also be pointed out. When the treaty was negotiated, it was predicted that the world would have 25 to 30 states with nuclear weapons within 20 years. Instead there are only four additional countries that have obtained nuclear weapons up to now. These countries are India, Pakistan, Israel and North Korea.²² However, several other countries have conducted clandestine nuclear programmes, such as Libya and Iraq, or are believed to have ongoing weapons programmes despite being members of the NPT, such as Iran.

Initially, the NPT was only valid for 25 years after its entry into force, but the review conference in 1995 also offered the opportunity for an extension. The conference was able to agree on the indefinite extension of the Treaty and also adopted a decision on the principles and objectives of nuclear non-proliferation and disarmament.²³ The adoption of these principles and objectives was a prerequisite for indefinite extension for many non-nuclear weapons states and required the 'completion by the Conference

²¹ Specifically Uranium 235 with enrichment grades higher than 20%, also known as Highly Enriched Uranium (HEU), and Plutonium 239 containing a low level of Plutonium 240.

²² South Africa would be the fifth country, but it gave up its nuclear weapons programme and dismantled its small nuclear arsenal in the early 1990s.

²³ United Nations Office for Disarmament Affairs (UNODA), *1995 NPT Review Conference*, accessed at <http://www.un.org/disarmament/WMD/Nuclear/1995-NPT/1995NPT.shtml> on 13 July 2012.

on Disarmament of the negotiations on a universal and internationally and effectively verifiable Comprehensive Nuclear Test-Ban Treaty' as well as 'the immediate commencement and early conclusion of negotiations on a non-discriminatory and universally applicable convention banning the production of fissile material for nuclear weapons or other nuclear explosive devices'.²⁴

The first treaty, the Comprehensive Nuclear Test-Ban Treaty (CTBT), was negotiated by the Conference on Disarmament (CD) between 1993 and 1996. As the CD operates on the principle of consensus it was first unable to agree on the treaty because India and Iran blocked it. Pakistan also announced that it was unable to sign the treaty because of India's position, although this did not stop the treaty text from going to the UN General Assembly (GA).²⁵ This deadlock was finally circumvented by Belgium submitting the treaty as a 'national paper' to the CD so that it could go forward to be voted on by the GA, where it was introduced by Australia. Only three countries voted against it (India, Libya and Bhutan). Even Iran supported the resolution on the treaty at this point. The CTBT was finally opened for signature in September 1996 but, as yet, has not entered into force. The reason for this is that a number of states are required to ratify the treaty, namely those CD members that possessed a nuclear reactor at the time of the negotiations. Some of these countries (India, Pakistan and North Korea) have not signed the treaty and it is unlikely that this will happen any time soon. Some other countries have signed but not ratified the treaty (China, Egypt, Iran, Israel and the US).

²⁴ Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, *Decision 2 - Principles and Objectives for Nuclear Non-Proliferation and Disarmament*, NPT/CONF.1995/32 (Part I), Annex, Art. 4(a) and 4(b), 5, accessed at http://www.un.org/disarmament/WMD/Nuclear/1995-NPT/pdf/NPT_CONF199501.pdf on 13 July 2012.

²⁵ K. A. Hansen, *The Comprehensive Nuclear Test Ban Treaty: An Insider's Perspective* (Stanford: Stanford University Press, 2006), 38–46.

The present situation suggests that the CTBT is a dead treaty with little to no chance of its entry into force in the foreseeable future. But is this really the case or is there still a good reason for EU Member States (who have all ratified the treaty) and other European countries to push to keep the CTBT alive? India and Pakistan conducted their last nuclear tests in 1998, China tested in 1996 for the last time (the same year as France's last tests), and the US has observed a moratorium on testing since 1992. Only North Korea has violated this de facto moratorium by conducting tests in 2006 and 2009. Even though the treaty has not entered into force, an extensive network of monitoring stations has been constructed worldwide, operated by the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Organization (CTBTO). This network successfully detected the North Korean tests even though the one in 2006 was low yield.²⁶

A major argument raised in the US Senate regarding CTBT ratification was that the treaty is not verifiable. It is argued that special technical arrangements would allow those wishing to circumvent the treaty to effectively 'decouple' an underground nuclear explosion with very low yield from its surroundings so that the characteristic seismic signature of the explosion could not be observed. Whether this is possible is a subject of debate among experts and an accurate assessment would probably require access to classified data. However, an assessment can be made of whether the risk of continued cheating outweighs the potential benefits of ratifying the treaty. If it is assumed that, excepting North Korea, no country will conduct any major underground tests, it hardly matters if 'decoupled' tests with

²⁶ O. Dahlman, S. Mykkeltveit and H. Haak, *Nuclear Test Ban: Converting Political Visions to Reality* (Dordrecht: Springer, 2009), 162–6.

very small yields are conducted. The recognised nuclear powers have obtained sufficient data from previous tests to be able to maintain current weapons, and even design new ones, without testing. For the US test moratorium to hold, the secretary of energy (the US Department of Energy is responsible for the maintenance of the US nuclear stockpile) must certify to the president that the stockpile is safe and reliable. This has been achieved for the past 20 years through an extensive stockpile stewardship programme. China has indicated that it would ratify the CTBT if the US would do the same. Doing so would seriously complicate any attempt by China to significantly expand and modernise its relatively small nuclear arsenal. Even without legal entry into force, it would enforce the de facto testing moratorium and create a tradition of 'non-testing'. However, for any country that attempts to obtain its own nuclear arsenal it is important to demonstrate that it has become a nuclear power through a public demonstration and these tests are also essential to increase the country's self-assurance (Israel did not test publicly but allegedly conducted a test in the South Pacific in 1979).²⁷ Even though the administration of US President Obama is advocating CTBT ratification, it will probably not ask the US Senate for a vote on the treaty if risks of failure remain. Former US President Bill Clinton sought Senate ratification in 1999 and failed to achieve even a single majority, while arms control treaties require a two-thirds majority. Key Republican senators have raised particular objections to the treaty, but also question the value of arms control treaties in general.²⁸

²⁷ T. C. Reed and D. B. Stillman, *The Nuclear Express: A Political History of the Bomb and its Proliferation* (Minneapolis: Zenith Press, 2009), 177–80.

²⁸ The main actors among Republican senators against CTBT ratification in 1999 included Senators Jesse Helms, Robert Smith, James Inhofe and Jon Kyl. Both Inhofe and Kyl are currently members of the US Senate (Kyl will have left in January 2013 having not sought re-election) and voted against the latest arms control treaty between the US and Russia (New START) in 2010.

The second treaty demanded by the NPT review conference in 1995, the Fissile Material Cut-Off Treaty (FMCT), was also to be negotiated by the CD. Little progress has been made since the CD agreed to establish a committee for this purpose. In 2004 the administration of former US President George W. Bush opposed the inclusion of any verification mechanisms in the treaty because they considered it to be non-verifiable. This position was reversed by the Obama administration in 2009, but negotiations in the CD are currently blocked by Pakistan, even though it has been pressured by major powers, including the US, the UK, Russia and China, to change its position. It currently appears that the FMCT negotiations will remain blocked and that an alternative forum for negotiations that does not require an absolute consensus will be needed to move forward.

Former key advocates of arms control in the Republican ranks who will not be present in the next Senate include Richard Luger, famous for initiating the Cooperative Threat Reduction Program with former Democratic Senator Sam Nunn. The programme aimed to secure and dismantle weapons of mass destruction and their associated infrastructure in former Soviet Union states. Luger lost his primary election for the 2012 Senate campaign. All of this makes US ratification of the CTBT unlikely, even if a deal with China to ratify jointly can be made.

A low-key but important contribution might come from Europe through the initiation of informal talks on a political level with members of the US Senate on arms control issues in general, and the CTBT in particular. Political think tanks with close relationships with the Republican side, such as the Centre for European Studies (CES), can play an important role in this dialogue. This dialogue should focus on the pros and cons of two different intellectual

approaches to tackling the problems of international security and nuclear proliferation. The first is the approach favoured by many Republicans of not being restrained by new arms-control treaties but rather forming ad-hoc coalitions ‘of the willing’, as in the case of the Proliferation Security Initiative (PSI).²⁹ The second is the alternative approach of ‘effective multilateralism’, favoured by the EU as expressed in its strategy against WMD proliferation.³⁰ This approach is also favoured (with somewhat different priorities) by the current US administration. A key element of this discussion should be verification,³¹ as the non-verifiability of treaties is an often-heard argument against arms control measures. The risks and likelihood of ‘cheating’ are part of this question. As verification is an inherently technical topic, the dialogue should also aim to include technical specialists in addition to lawmakers and diplomats. A verification regime is also a fundamental part of working arms control agreements. Their absence can render treaties useless as demonstrated by the Biological and Toxin Weapons Convention that entered into force in 1975 without having one. Despite this convention, the Soviet Union continued to run an active weapons programme.³² An accidental release of anthrax in the city of Sverdlovsk (now once again Yekaterinburg) in 1979 was caused by this programme, even though the programme’s existence was only admitted by former Russian President Boris Yeltsin in the 1990s. Thus, a working verification

²⁹ M. J. Valencia, *The Proliferation Security Initiative: Making Waves in Asia*, IISS Adelphi Paper 376 (Abingdon: Routledge 2005).

³⁰ Council of the European Union, *EU Strategy Against Proliferation of Weapons of Mass Destruction*, 5–8.

³¹ Verification is the process of determining whether or not a nation is complying with the terms of an agreement, and involves a combination of declaration of information by state parties as well as mechanisms and procedures to allow state parties to examine each other to verify that information.

³² J. Guillemin, *Biological Weapons: From the Invention of State-Sponsored Programs to Contemporary Bioterrorism* (New York: Columbia University Press, 2005), 131–47.

regime is indispensable for a treaty that state parties can trust. If compliance with a treaty is unverifiable it should not be signed or ratified. At the same time, arguments of verifiability should not be used light-heartedly to ‘kill’ a treaty when the real reasons are political.

A final note should be made about how the EU and the US implement arms control and disarmament on an institutional level. As pointed out above, since the Lisbon Treaty came into force actions related to non-proliferation and disarmament have fallen to the responsibility of the EEAS. One could argue that this makes good sense; similar arrangements can be found in the US where these activities fall under the scope of work of the undersecretary of state for arms control and international security, and the assistant secretary for arms control, verification and compliance in the State Department.³³ Nonetheless, locating arms control and disarmament within a department for foreign affairs—that is, the EEAS—is not without its pitfalls. Until the late 1990s the US maintained an independent organisation for these tasks, the Arms Control and Disarmament Agency (ACDA). The rationale for this was, among other things, that a foreign service might favour a specific policy towards a country because of a short-term aim to improve bilateral relations, even if this policy violated current non-proliferation or arms control principles.³⁴ Or, to phrase it differently, the pursuit of arms control and disarmament goals will often conflict with the primary mission of a foreign service.³⁵ An example

³³ At the time of publication both positions are held by Rose Gottemoeller, who is assistant secretary and acting undersecretary.

³⁴ T. Graham, *Disarmament Sketches: Three Decades of Arms Control and International Law* (Seattle: University of Washington Press, 2002), 214–36 and 294–312.

³⁵ US Senate, *A Return to Arms Control and Non-Proliferation Process*, Testimony of Ambassador Thomas Graham Jr. before the Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia, Committee on Homeland Security and Government Organization (15 May 2008), 2, accessed at <http://www.hsgac.senate.gov/download/graham-testimony-national-security-bureaucracy-i-051508> on 13 July 2012.

of this was the provision of US aid to Pakistan in the 1990s, which was given on the legal condition that Pakistan did not possess nuclear weapons. Even though it was known to the US intelligence community that Pakistan possessed a clandestine nuclear capability at that time, the US State Department pressured for ongoing aid despite being aware of this information. ACDA pointed out that this aid would be granted despite knowledge of their nuclear capability and in violation of existing legislature. Aid was finally suspended after Pakistan publicly tested a nuclear device in 1999. A more current example is the aim of some countries to supply India with nuclear technology despite the fact that India is not an NPT signatory and does not operate all of its nuclear facilities under international safeguards. An independent agency would be able to make their position heard and could contribute valuable advice and information to political leaders, enabling a more informed decision-making process. Looking back to the time of ACDA's creation in 1961, then Secretary of State Dean Rusk testified in favour of an independent organisational entity: 'Disarmament is a unique problem in the field of foreign affairs. It entails not only a complex of political issues, but involves a wealth of technical, scientific, and military problems which in many respects are outside the [State] Department's formal concerns and, in many instances, reach beyond the operational functions the Department is designed to handle.'³⁶

³⁶ Quoted in US Senate, *A Return to Arms Control and Non-Proliferation Process*, 2.

Nuclear proliferation and the case of Iran

In the European Security Strategy adopted in 2003, the EU describes the proliferation of nuclear weapons as 'potentially the greatest threat' to its security.³⁷ This was reiterated in the report on the implementation of the strategy in 2008.³⁸ It is generally accepted that Israel, Pakistan and India remain as de facto nuclear weapons states outside of the NPT, but, since the nuclear tests conducted by North Korea, the pace of nuclear proliferation seems to have increased again. While North Korea appears to be a remote place from a European perspective (although it should not be seen in this way) the threat from the alleged Iranian nuclear programme is perceived as a clear and present danger to European security interests. The Iranian case is therefore the litmus test for European non-proliferation efforts. Iran still denies that it is pursuing a nuclear weapons programme and claims that its uranium enrichment efforts are for peaceful purposes only.

In assessing Iran's intentions one should investigate if nuclear armaments provide the country with clear benefits compared to the 'costs' it faces in the stand-off with the international community. A nuclear Iran would be virtually immune to any external attempts to change the regime by force. From Iran's perspective, the military action by US and coalition troops against a non-nuclear Iraq during the

³⁷ Council of the European Union, *A Secure Europe in a Better World*, 3.

³⁸ Council of the European Union, *Report on the Implementation of the European Security Strategy: Providing Security in a Changing World*, S407/8 (11 December 2008), 3, accessed at http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressdata/EN/reports/104630.pdf on 13 July 2012.

first and second Gulf Wars serves as a strong incentive for nuclear armament. The existence of a nuclear armed North Korea has shown the Iranian leadership that a country can successfully withstand strong international pressure while maintaining an inherently aggressive foreign policy posture. Nuclear arms can be used for blackmail and as a back-up to project power in the region. It has also been argued that there would be an ideological or religious component if Iran were to use nuclear weapons against Israel, raising the question of whether Iran can actually be deterred by threats of nuclear retaliation. In the end this would depend on who is in control of the nuclear weapons in Iran. The country has been prone to internal power struggles and political fragmentation since the revolution in 1979. While there are clearly factions inside Iran among whom the possibility of deterrence could be questioned, the distribution of power among different groups suggests that the country would pursue a system of joint nuclear control. Aside from the question of whether Iran would use a nuclear arsenal, there are other potential consequences that make Iran's nuclear ambitions a potential nightmare. It is not unlikely that other countries in the region would feel threatened to an extent that they might pursue the development of their own nuclear weapons. This would trigger an arms race in one of the world's most fragile regions. A nuclear Iran would also feel empowered to support allies such as Lebanon's Hezbollah, the struggling Assad regime in Syria or insurgents in Afghanistan in a much more open and aggressive way. It might also trigger further nuclear proliferation outside the region, serving as a 'successful' example of how to evade demands from the international community. Therefore Europe, as well as the US and of course Israel, considers an Iran armed with nuclear weapons unacceptable. The crucial question is how to stop Iran from actually producing

functional weapons. Military intervention through air strikes is risky because it is not clear if such attacks would be able to destroy Iran's nuclear infrastructure to the required extent and it would probably trigger further military conflict in the region. Another long-term military engagement in the region with unclear prospects and high costs cannot be in the interests of Western powers. Continuing the current combination of negotiations and sanctions could lead to the point where Iran can no longer be stopped from producing weapons. However, sanctions are the most effective tool that can be used because they inflict high costs. With its national currency in free fall and the domestic economy in decline, it will be more and more difficult for Iran's government to support large military programmes and the nuclear programme while keeping its population from revolting due to the economic situation. The risk remains, however, that Iran would try to conduct a crash-programme to create the bomb even sooner. In order for Iran to agree to a diplomatic solution, it must realise that stopping its nuclear ambitions will lead to better outcomes than continuing the weapons programme. The closer the situation comes to the 'point of no return', at which Iran could produce weapons and declare its nuclear capabilities, the more difficult it will be to convince the country that going non-nuclear is the better strategy.

The question of whether Iran's nuclear infrastructure can be effectively destroyed can only be answered with classified information and intelligence data that is not available to the public. It therefore makes little sense to speculate and conjecture about it. However, the possible consequences and the outlook for war in the region are grim. Thus one should focus on the question of how Iran can be brought to the point at which it would abandon its nuclear

ambitions. Iran's current negotiating strategy is not so much based on rejecting proposals in an outright fashion as on countering them with non-responsive counter-proposals, endless negotiation and filibuster.³⁹ This was demonstrated by Iran's approach to the rounds of negotiation that took place in 2012 in Istanbul, Bagdad and Moscow. Even though there were moments where an agreement seemed to be at least a theoretical possibility, these hopes were quickly crushed by new demands and preconditions. This has led to increased sanctions from the US and the EU against Iran. In particular, the EU's decision to halt oil imports from Iran was seen as a major increase in pressure. Iran is apparently exploring ways to bypass the imposed restrictions. There have been allegations made against Iraq as well as some European banks that they have been helping Iran gain access to the foreign currency that it needs to pay for imports.

But are these sanctions sufficient to stop Iran before the line is crossed and military action becomes inevitable? With its current policy Iran is in breach of six UN Security Council Resolutions⁴⁰ and therefore is not in good standing with its obligations under the NPT. In addition to increasing the 'pain' of sanctions and presenting incentives for going non-nuclear, the powers (the NPT nuclear weapons states and Germany) negotiating with Iran, as well as the European Union and all those countries in good standing with their obligations under the NPT, should actively engage Iran on the discrepancy between what is said by Tehran and what is actually done. Important engagements could also originate from Iran's Arab neighbours and through the Arab League.

³⁹ M. Fitzpatrick, *The Iranian Nuclear Crisis*, IISS Adelphi Paper 398 (Abingdon: Routledge, 2009).

⁴⁰ UN Security Council Resolutions 1696 (July 2006), 1737 (December 2006), 1747 (March 2007), 1803 (March 2008), 1853 (September 2008) and 1929 (June 2010).

What is demanded from Iran and what is offered, as well as Iran's response, must be made more public. By engaging Iran in a more public and aggressive way it is also important to show clear paths out of the current crisis situation. The threat of possible military action must also be and remain credible. Military action should not be left to Israel alone, as this would trigger some solidarity for Iran, even though most Muslim countries do not consider Iran a close ally (and especially not the Arab countries). As major regional powers, such as Saudi Arabia, perceive a nuclear Iran as a major threat they should become more actively involved in solving the problem. They should not be allowed to hope that Israel will do them a favour by dealing with Iran militarily if required.

Given the potential time frame for Iran to build a nuclear weapon, negotiations will enter an end-game state in the near future. Iran will try to use the disagreement among its adversaries to its own benefit. It will also try to make the world believe that it is the victim of aggression. Improving international awareness and cooperation on the issue is the best way to deny Iran this opportunity and should be actively pursued before time finally runs out.

A world free of nuclear weapons – possible and desirable?

President Barack Obama's Prague speech in April 2009 made the world sit up and listen when he publicly outlined a vision of a world free of nuclear weapons.⁴¹ While quite a large number of commentators dismissed his proposal as unrealistic, it received an overwhelmingly positive public response worldwide. In his speech Obama committed himself and his administration to the vision promoted by the Nuclear Security Project of former high-ranking US statesmen George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn in a number of famous op-eds in the *Wall Street Journal*.⁴² These four men, two Republicans and two Democrats, can hardly be described as typical 'doves' with respect to disarmament and arms control. Yet, they follow up on the vision of former US President Ronald Reagan, who expressed the idea of abolishing nuclear weapons during a summit with former Soviet leader Mikhail Gorbachev in Reykjavik in 1986.⁴³ This makes it even more important to understand why these men believe that the goal of nuclear zero is one worth pursuing and to conduct a reality check on whether this goal stands any chance of realisation. In a nutshell, the four argue that nuclear proliferation is one of the major threats to US

⁴¹ The White House, *Remarks by President Barak Obama* (Prague, 5 April 2009), accessed at http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered on 13 July 2012.

⁴² Nuclear Security Project, 'Wall Street Journal Op-Eds', accessed at <http://www.nuclearsecurityproject.org/publications/wall-street-journal-op-eds> on 13 July 2012.

⁴³ P. Taubman, *The Partnership: Five Cold Warriors and Their Quest to Ban the Bomb* (New York: HarperCollins Publishers, 2012).

security, mentioning cases like North Korea and Iran, and referring to the accelerated spread of nuclear weapons, nuclear know-how and nuclear material, combined with reduced technological barriers. It appears that the Obama administration shares this view and acknowledges that non-proliferation cannot be realised by the US and its closest allies alone, but requires commitment and cooperation with all those countries that are in good standing with their obligations under the NPT to achieve tougher sanctions against rule-breakers, enhance safeguards and tighten export controls. In order to garner this level of cooperation and support, steps towards further reduction of nuclear arsenals are crucial. It should, however, be noted that a process leading to nuclear disarmament would require not only time but also several political and security conditions to be met.

After Obama's Prague speech experts eagerly awaited the release of the 2010 Nuclear Posture Review (NPR), a legislatively mandated review that establishes US nuclear policy, strategy, capabilities and force posture for the next five years.⁴⁴ The review states that the US aims to reduce the role of nuclear weapons in deterring non-nuclear attacks, but also that it will maintain a credible nuclear deterrent and reinforced regional security architectures, including missile defences, to reassure non-nuclear allies. With respect to further reductions and a potential 'glide-path' towards nuclear zero, the NPR highlights the preconditions that must be met: '. . . halting the proliferation of nuclear weapons, much greater transparency into the programs and capabilities of key countries of concern, verification methods and technologies capable of detecting violations of

⁴⁴ US Department of Defense, *Nuclear Posture Review Report* (April 2010), accessed at <http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf> on 13 July 2012.

disarmament obligations, enforcement measures strong and credible enough to deter such violations, and ultimately the resolution of regional disputes that can motivate rival states to acquire and maintain nuclear weapons'.⁴⁵ It also states that these conditions do not exist today but that following the recommendations of the NPR would be a step towards achieving these conditions and moving towards lower numbers, and eventually zero.⁴⁶

When trying to answer the question of whether a 'nuclear zero' is at all possible, an advisable strategy is to go through the steps that would lead to this final goal. A major milestone on this path would be a situation in which both Russia and the US would be able to establish deterrence at 'low numbers', generally meaning a total of five hundred or fewer warheads each. It would also mean that, at some point prior to this, the other nuclear powers would have to join this process by also reducing their arsenals. Admittedly a log of question marks can be raised and the required time frame to arrive at this point is unclear, but an analysis of the question of whether the US and Russia can achieve deterrence at low numbers has been the subject of some significant research. In a recent impressive study, James M. Acton from the Carnegie Endowment for International Peace came to the conclusion that deterrence is not a numbers game following a rationale of 'the more the better', but can be achieved at low numbers. This observation is supported by the fact that other countries have effectively achieved deterrence without building up large arsenals like the US and the Soviet Union did during the Cold War.⁴⁷

⁴⁵ US Department of Defense, *Nuclear Posture Review Report*, xv.

⁴⁶ US Department of Defense, *Nuclear Posture Review Report*, xv.

⁴⁷ J. M. Acton, *Deterrence during Disarmament: Deep Nuclear Reductions and International Security*, IISS Adelphi Paper 417 (Abingdon: Routledge, 2011).

An important factor to address before political leaders will agree to deep reductions resulting in small arsenals is crisis stability. A crisis is stable if neither opponent has an incentive to use his nuclear weapons because of fear the other side is about to use them first. Normally this stability is achieved by maintaining survivable nuclear forces, which guarantees the ability for a retaliatory strike. Low numbers demand high survivability to make retaliation a credible threat and, therefore, to maintain deterrence. While the US maintains a highly survivable submarine-based deterrent, Russia's most survivable force is probably the Intercontinental Ballistic Missile (ICBM) force on road-mobile launchers. Russia is currently trying to improve its submarine force by introducing a new missile system (*Bulava*) to be used on its latest strategic missile submarines (*Borei class*). It appears that Russia believes that its strategic forces might be vulnerable. This also becomes apparent from Russia's strong resistance to the planned NATO missile shield. However, hitting dispersed mobile ICBM launchers is difficult, and successful interception of ICBMs under realistic conditions is still to be demonstrated. A stabilising factor might be to once again address the issue of missiles armed with multiple warheads. The START II Treaty was intended to eliminate so-called MIRVs (Multiple Independently Targetable Re-entry Vehicles) from land-based ICBMs, but the treaty never entered into force. MIRVs are considered problematic for two reasons: first, they are very lucrative targets because hitting a MIRVed missile means taking out a large number of enemy warheads with a single hit. Equally though, they are ideal tools for taking out the enemy's missile force in a counterforce strike because a single missile can hit multiple targets. Therefore, incentives

exist both to use them early on in a crisis and to attack them early on. In both cases this affects crisis stability and MIRVs should be back on the agenda, even though it might be tough to persuade Russia to give up its land-based MIRVed ICBMs. The US currently arms its Minuteman III missiles with a single warhead, even though it is capable of carrying three.

Verification will be another critical point for deterrence at low numbers. While proper verification regimes are crucial for any kind of arms control or reduction agreement (see above), they become even more important when arsenals become smaller. Cheating in a regime of high numbers is time consuming and easily detectable, whereas small arsenals make this easier.⁴⁸ An important question in this regard is why a country bound by a treaty with verification provisions should cheat at all. One reason would be to gain a short-term advantage because the state considers the use of nuclear weapons imminent and is even preparing for a disarming first strike. Given the current relations between the recognised nuclear weapons states, this situation is highly unlikely, and if relations should deteriorate to a point where trust in the treaty partners and the verification mechanisms to detect violations effectively no longer exists, the treaty will most likely be terminated. Another reason for foul play would be to gain a long-term edge over an adversary. However, if effective verification mechanisms are in place, this is combined with a constant risk of the violation being detected. If this happens there are a number of possible negative consequences, ranging from strained relations, via damage to international reputation, to potential 'punishment' from the other side. So, even at low numbers, it is not easy

⁴⁸ If a state tries to secretly expand its arsenal of 100 warheads by 10% it only requires the secret deployment of an extra 10 warheads; if the arsenal has 1000 warheads an additional 100 warheads must be deployed. This is not only more time-consuming than for a small arsenal but the risk of being caught is also larger as one has to deploy 90 warheads more than in the small arsenal case.

to explain why countries would try to get around treaty obligations and agreed numbers if a strong and effective verification mechanism was in place.

If the question of crisis stability can be solved and treaties to reduce warheads and launchers to small numbers can be effectively verified, mutual deterrence between the US and Russia (central deterrence) at low numbers might indeed be possible. But, especially for the US, there is an additional problem that directly affects Europeans: the US is committed to deterring aggression against its allies using its own nuclear arsenal (extended deterrence) and it must reassure these allies of its ability to honour this commitment. For the NATO members in Europe that are NNWSs, this raises the question of whether their security interests are sufficiently protected by the US if the US nuclear arsenal goes down to low numbers. Some countries follow the reasoning of ‘the more the better’ while others might be more willing to accept small arsenals. However, the real point is whether the security guarantees given by the US to its allies are credible. In the case of nuclear weapons this means whether the US would be willing to use nuclear weapons to defend an ally (and risk being attacked itself as a result of meeting its security obligations). While officials on both sides of the Atlantic have avoided this question (so as either to reassure NATO allies in Europe or to not offend the US by questioning their security guarantees) this problem might nevertheless exist. This is reinforced by the fact that it has been more difficult in the past to reassure allies than to deter adversaries.⁴⁹ Because of the taboo nature of this problem it is difficult to address, but strong and intact transatlantic relations are probably the best kind

⁴⁹ L. Freedman, *The Evolution of Nuclear Strategy* (New York: Palgrave MacMillan, 2003), 269–314.

of reassurance possible. It would also help if the NNWSs in NATO could reach a joint position on this issue. This debate need not be restricted to NATO but could be considered EU-wide under the CFSP. An informal transatlantic dialogue among experts and policymakers, like the one proposed on the fundamental questions of arms control in the previous section, is required, and again the CES can contribute by gathering policymakers and experts from Europe and the US. Because it deals with the ‘elephant in the room’, the informal, and possibly confidential, nature of this dialogue is important.

Tactical nuclear weapons in Europe

One major concern for Europeans is most certainly the threat from Russian tactical⁵⁰ nuclear weapons. Currently, Russia enjoys significant superiority in numbers (about 4,000 Russian warheads compared to about 500 in the US arsenal⁵¹) and there is no treaty in place to control their numbers or the location of their deployment. Several European states, especially those in close proximity to Russia have expressed serious concern about this issue. It is also unlikely that any further reductions in the strategic

⁵⁰ Tactical nuclear weapons are those for battlefield use and normally have a smaller yield. Typical means of delivery are by aircraft, short-range missiles, artillery, mines or torpedoes. Strategic nuclear weapons are normally of larger yield and used for general deterrence and to hit ‘strategic’ targets such as command and control facilities, enemy missile silos and other high-value targets. Typical delivery methods are by aircraft or ICBMs (sea or land based). It should be noted that some weapons can serve in both roles and the categorisation is somewhat blurred.

⁵¹ These are the total numbers in the arsenals, not just those in Europe.

arsenals of the US and Russia would be possible without addressing the problem of tactical nuclear weapons. This became evident from several statements made in the US Senate during the New START ratification process. From a Russian perspective there are at least two reasons to maintain large tactical nuclear forces. The first is that Russia values its tactical weapons as a counterweight to NATO's conventional superiority in the European theatre (and to the perceived vulnerability of their strategic forces in case of the deployment of a NATO ballistic missile shield). The second is to deter a potential military threat to Siberia originating from Asia. Even though the Russian Federation has tried to modernise its conventional forces, the decline in their quantity and quality during the 1990s and early 2000s has made this a challenging task which is straining Russia's economic and financial resources.⁵² These tactical weapons must be destroyed at some point on the path to deterrence at low numbers, but addressing this area might present a more difficult task than reaching agreement over smaller strategic arsenals. For example, a Russian precondition for even starting to negotiate reductions in tactical nuclear weapons is still the complete transfer of US tactical weapons from Europe back to the US.⁵³ It has recently expanded its list of preconditions even further, now also demanding that the infrastructure to store and maintain the weapons in Europe must be removed before negotiations can begin.

⁵² R. N. McDermott, *The Reform of Russia's Conventional Armed Forces: Problems, Challenges, and Policy Implications* (Washington DC: The Jamestown Foundation, 2012).

⁵³ W. Pincus, 'Russian Tactical Nuclear Weapons still an Issue after START Treaty Ratification', *The Washington Post*, 27 December 2010, accessed at <http://www.washingtonpost.com/wp-dyn/content/article/2010/12/27/AR2010122702931.html> on 13 July 2012.

Europeans should try harder to arrive at a common position on this issue. This requires answering a number of key questions. Do Europeans believe that the current number of US tactical weapons in Europe and their means of delivery by aircraft (currently either Tornados or F-16s) form a credible deterrent against the use of Russian tactical weapons? Can the US strategic nuclear arsenal be a replacement for tactical weapons in deterring Russia (or others) from military action in Europe? This is at least worth considering given the situation in Asia where US tactical weapons were removed from the Korean Peninsula in the early 1990s, although their reintroduction is currently the subject of political debate. Can negotiations on tactical nuclear weapons be linked with conventional armed forces in Europe? The former Treaty on Conventional Armed Forces in Europe, in effect since 1992, was suspended by Russia in 2007 due to the plans for the deployment of a ballistic missile shield by NATO. If Europeans could agree on a common position this would ease the process of bringing this position into alignment with that of the US and would strengthen the overall negotiating position of the West.

It seems, however, that Russia is currently not interested in significantly reducing its tactical arsenal. If this is the case there will not be a treaty at any point in the near future. Aside from the need to counterbalance NATO conventional superiority, a treaty on the reduction of tactical weapons would also require an intrusive verification regime, and it appears that support for this is absent in the Russian military. In this deadlocked situation NATO and the EU should take the opportunity to increase political pressure on Russia at the international level and point out explicitly the kind of reduction agreement that could be the basis for the negotiations which are being blocked by Russia's unrealistic

preconditions. NATO members' Dual-Capable Aircraft (DCA) (those that would carry nuclear weapons) will be reaching the end of their serviceable life within the next few years. This requires their replacement with either new aircraft (the Eurofighter is currently not a DCA and it is not planned to certify it for this role) or with US aircraft, which would jeopardise the concept of nuclear sharing. One option would be to maintain the required nuclear infrastructure (shelters, etc.) but to relocate the actual weapons back to the US as was done in Japan and South Korea. Although this would require significant efforts to reassure NATO members, especially new ones, that the security guarantees laid down in Article V of the North Atlantic Treaty would be honoured, this withdrawal might be used to challenge Russia's apparent intent to maintain a large arsenal of tactical nuclear weapons. The latest developments, however, point in the direction of maintaining the status quo.⁵⁴ Germany plans to keep its fleet of Tornado fighter-bombers in service for an extended period and the US is about to undertake a large life-extension programme for the warhead type that is deployed in Europe. One has to ask whether the significant financial burden inflicted by these programmes is justified. A careful analysis should be conducted into whether these weapons, carried by aircraft at the end of their serviceable lives and based far away from their potential targets, represent a credible deterrent in the European theatre.

⁵⁴ A. Berger, *A Tornado in a Teacup? Examining Germany's Alleged Nuclear Strike Aircraft Modernisation*, Royal United Service Institute (7 September 2012), accessed at <http://www.rusi.org/analysis/commentary/ref:C5049CC5E5A166/#.UHRxHrSs7To> on 1 October 2012.

If the unthinkable were to happen

Assuming that progress is made in the field of non-proliferation, arms control and even further disarmament, there is still the possibility that all these measures will be insufficient to stop the use of a nuclear weapon by a state actor or a terrorist group. It is generally deemed unlikely that a nuclear weapons state will transfer a weapon to terrorists. However, it cannot be ruled out that a group with the required financial means and technical expertise might be able to construct an improvised nuclear device and detonate it in a major city.⁵⁵ It is often claimed that a terrorist only needs to be successful once while law enforcement must succeed all the time. However, the situation is not as bleak as this because the opposite case can be made for every individual action by an adversary actor. The attacker must succeed at every individual step from obtaining the fissile material, via the assembly of the device and the successful placement of the device at the target, to its successful detonation, while law enforcement only has to stop him at any one point. However, despite this, an attack is still a possibility, and even though the likelihood is low, the potential consequences warrant consideration of such an event.

Modern European cities differ fundamentally from Hiroshima and Nagasaki. Concrete and glass have replaced wood as the major building material. This would have a fundamental impact on the effects of a nuclear explosion (assuming a yield no higher than those of the bombs dropped over Japan; 16 and 21 kt respectively).

⁵⁵ M. Levi, *On Nuclear Terrorism* (Cambridge, MA: Harvard University Press, 2007), 4–14.

The electromagnetic pulse (EMP), which was of no major importance in 1945, would wipe out mobile phone networks, computers and other electronic devices, making the work of the emergency services much more difficult and increasing the state of panic among affected citizens. While a nuclear detonation would obviously claim a large number of lives, an accurate assessment of this number could be established through detailed knowledge of weapon effects in an urban environment and by gaining a better understanding of how people react during a catastrophe and how to communicate with them. The answer to the simple question of whether people in a specific city block close to ground zero should evacuate or seek shelter for a period of time could be the difference between survival and death for hundreds or thousands of people. Today detailed weapon effects data can be obtained through highly advanced computer simulations (which are also beneficial for assessing the effects of earthquakes or other natural disasters). Such an assessment should be initiated by the EU, while France and the UK should contribute to this by using the extensive knowledge that has been accumulated through their weapons programmes. A key benefit would be a collaboration with the US on this issue.

It is important to bear in mind that an improvised nuclear device will not be high yield and therefore it would not be able to wipe out a major European city. Questions of incident response and also of post-disaster recovery must be addressed. While individual projects have been funded through the EU Framework Programmes for Research and Technological Development, the complexity of the scientific questions that have to be answered call for a larger, more coordinated effort.

Conclusion

As shown above, arms control is not an end in itself. It is an approach to improving security and lowering the risk of nuclear proliferation and use, but it is heavily dependent on the political environment. A Task Force Report on US Nuclear Weapons Policy by the Council on Foreign Relations strongly favours increased efforts in the fields of arms control and non-proliferation while also calling for the maintenance of a 'credible nuclear deterrent' for as long as required.⁵⁶ In his classic treatment of nuclear strategy, Sir Lawrence Freedman comes to the following conclusion:

What is often forgotten in strategic studies is that the balance of terror rests upon a particular arrangement of political relations as much as on the quantity and quality of the respective nuclear arsenals. Movements in these political relations could prove far more disturbing to nuclear stability than any movements of purely military factors. The major task for the future must be to address the problems of nuclear arsenals in a world of political change.⁵⁷

As the technological barriers to nuclear proliferation will diminish further over the coming decades and nuclear weapons are still considered to be adequate answers

⁵⁶ W. P. Snowcroft and C. D. Ferguson (Chairs), *US Nuclear Weapons Policy*, Independent Task Force Report no. 82, The Council on Foreign Relations (New York, 2009), 81–97, accessed at http://i.cfr.org/content/publications/attachments/Nuclear_Weapons_TFR62.pdf on 13 July 2012.

⁵⁷ L. Freedman, *The Evolution of Nuclear Strategy* (New York: Palgrave MacMillan, 2003), 463.

to the security problems of certain states, strengthening the non-proliferation regime is more important than ever. While the regime that currently exists under the provisions of the NPT is far from perfect, it should be realised that it is the best we currently have. Risking what is left of an international consensus on the non-proliferation and non-use of nuclear weapons would therefore be contradictory to our own security requirements. Following a path of reduced reliance on nuclear weapons within NATO, negotiating lower arsenal sizes between the US and Russia, and strengthening international norms while maintaining a nuclear deterrent for as long as it is required is a feasible way forward. For Europe this means understanding and phrasing more clearly what the role of nuclear weapons should be for the foreseeable future and how they should contribute to security needs on the continent in the years to come. This necessary process really requires us to 'rethink the bomb'. An intensified dialogue is required among EU and European NATO countries, and with the US (and Canada), and it is also important to find a way to address the 'elephant in the room'. In times of financial and political crisis in Europe this might be a difficult task as the focus is on other areas, but putting this dialogue on hold will do more harm than good. Even in times when leadership attention is focused on other areas there is plenty of opportunity for other actors, like the CES, to move things forward. These opportunities should be taken.

Policy recommendations

- **Develop a common European position (within the EU and NATO) with respect to the future of tactical nuclear weapons on the continent.**

European NATO members should sit down and define the future role of tactical nuclear weapons on the continent. This discussion should also include an EU component and EU Member States that are not members of NATO need to be part of this. It is clear that the decision regarding NATO weaponry will be made by NATO, but it simply does not make sense that the EU takes action on disarmament and non-proliferation while not even entering into the discussion on the three crucial questions that have to be answered: Who needs to be deterred? Why is deterrence required? What means are necessary to achieve this (and are the current ones sufficient)? There will be differences of opinion on the issue but now is the time to engage in the debate. This will ease the even more difficult process that must follow: consultation and the phrasing of a joint position with the transatlantic partners, and engagement with Russia in a process to resolve the issue.

- **Establish informal transatlantic talks between experts and policymakers on the questions of nuclear arms control and disarmament.**

While official consultations between experts from the EU and its Member States on the one hand and their counterparts in the US on the other are important, there should be new efforts to informally engage policymakers

and experts in transatlantic dialogue. It may be especially important to engage in a dialogue with those members of the US Senate that are inherently critical of restraining the US through bilateral, multilateral or international treaties. As this kind of critique is predominantly voiced by members of the Republican Party, there is a unique opportunity for the CES to initiate and lead the discussion through its close transatlantic ties and good working relationship with Republicans.

- **Promote the establishment of an international nuclear fuel cycle.**

In order to gain greater control over the production and distribution of nuclear material for peaceful purposes, European countries should continue and strengthen their efforts to build an international nuclear fuel cycle. Guarantees should be given that all state parties of the NPT that are in good standing with their treaty obligations will have non-discriminatory access to nuclear fuel for power generation, research reactors and other peaceful activities such as the generation of isotopes for medical use. Europe should push to include uranium mining and ore processing in the controlled activities, and mining activities where significant amounts of uranium ore are accumulated as a by-product should also be included. However, inconsistent handling of several cases by the Nuclear Suppliers Group, including the bending and even breaking of established rules that have taken years to be agreed on, as well as some countries' reluctance to agree to a consensus due to domestic issues, have cast doubts on the likelihood of this being implemented.

- **Make a final approach to break the deadlock in the Conference on Disarmament in order to start negotiating an FMCT. Otherwise, seek an alternative forum for FMCT negotiations.**

Negotiating an FMCT was part of the deal for the indefinite extension of the NPT. Without a doubt, the need to control the production and circulation of nuclear material that can be used for weapons is a crucial part of the non-proliferation agenda. It remains to be seen if such a treaty can be negotiated successfully, but to conduct this process 'in good faith' is an important demonstration to non-nuclear weapons states that the NPT regime is not a one-way road. The Conference on Disarmament, with its requirement of consensus, is a problematic institution as countries have learned how to effectively block progress in the CD. This is currently the case, with Pakistan blocking the CD from implementing its agreed programme of work on opening negotiations on an FMCT. CD members should engage in a final approach to break this deadlock, but, if this turns out to be unachievable, alternative ways to negotiate the treaty should actively be pursued.

- **Promote further acceptance of the Additional Protocol to the NPT for enhanced IAEA safeguards. Make ratification a prerequisite for the supply of nuclear technology and fuel.**

The Additional Protocol (AP) to the NPT is a measure in response to identified shortfalls in the NPT verification mechanisms and gives the IAEA a much better toolset to confirm compliance with or breaches of NPT treaty obligations by member states. Even though a large number of NPT state parties have ratified and implemented the

Additional Protocol, several state parties, such as Iran, have not. It should be strongly emphasised by those countries that have accepted the AP that acceptance of intensified and stronger safeguards is considered good practice under the NPT and that further access to nuclear fuel and sharing of nuclear technology is dependent on compliance with the AP. It should be pointed out that the AP is not discriminatory in nature but a requirement to meet today's verification challenges under the NPT.

- **EU training efforts for technical specialists from non-nuclear weapons states.**

NATO's three NWSs can draw upon extensive technical expertise from their respective nuclear weapons establishments. In the US these are the National Laboratories of the Department of Energy (especially the three weapons labs Los Alamos, Lawrence Livermore and Sandia); in the UK, the Atomic Weapons Establishment at Aldermaston; and in France the centres of the Direction des Applications Militaires (DAM) of the Commissariat à l'Énergie Atomique (CEA). The European NNWSs, on the other hand, have to rely on expertise from academic and civilian nuclear research. The EU should initiate efforts to train a roster of qualified specialists from the civilian side on weapons issues. This roster would be a valuable source of expertise for consultations and would also act as a candidate base for European specialists in international organisations such as the IAEA. The EU Joint Research Centre could serve as the organisational platform for this effort.

- **Actively engage Iran on its violation of UN Security Council Resolutions and seek international (but also regional) assistance to build pressure on Iran.**

Military intervention must be the last resort on the path to stopping Iran from pursuing nuclear weapons, as the success of air strikes cannot be guaranteed to effectively eliminate Iran's capabilities and all-out war in the region is likely to follow. To enhance the chance of success of negotiations it is necessary to increase pressure and 'pain' in the form of sanctions, but also to offer incentives and show ways out of the crisis. Iran should be publicly engaged on its violations of UN sanctions and its violation of obligations under the NPT. Support should be mustered from the NPT community, but also, and especially, from regional Arab powers that see a nuclear Iran as a threat to their security too. While maintaining a credible threat of military action, Europe and the US should not leave direct military action to Israel, as this would have disastrous consequences for the region. The same is true for Saudi Arabia and other Gulf countries that might see Israeli action as a convenient way to stay on the sidelines. Their active engagement will be crucial in the coming months.

- **Promote the signing and/or ratification of relevant WMD treaties in the Middle East.**

Even though the opening of talks to create a nuclear-weapons-free zone in the Middle East after the 2010 NPT review conference can be seen as a step in the right direction, many doubts remain. With no peace in the region and Israel's security concerns not adequately recognised, the country will not give up its nuclear deterrent. However, there should be an ongoing process in place and it might be

advisable to concentrate on the ratification of other WMD-related treaties to keep this process alive. Should the Syrian regime fall in the near future there might be a window in which Syria and Egypt could be made to sign the Chemical Weapons Convention (CWC) and then jointly ratify it with Israel that has already signed but not ratified the convention. A similar approach could be taken with respect to the Comprehensive Test-Ban Treaty. While Israel's neighbours will point out the importance of nuclear disarmament, joint action in the field of chemical weapons might be harder to ignore. Given the political uncertainty in Syria, and also in Egypt, it is unclear if progress is possible, but, as noted above, it is best to keep the process alive in order to identify areas where some kind of progress can be made.

- **An independent EU Arms Control and Disarmament Agency.**

The EU should establish an Arms Control and Disarmament Agency independent of the EEAS, in the model of the former US Arms Control and Disarmament Agency. It should be small but combine the required legal, diplomatic and technical expertise to serve as an independent council for non-proliferation and disarmament issues, both for conventional weapons and WMD. The head of the agency should be entitled to direct access to the president of the European Council, the president of the European Commission and the president of the European Parliament, and should be heard on all matters concerned with non-proliferation and arms control. This would also mean the extraction of the divisions for WMDs, conventional weapons and space from the Directorate of Security Policy and Conflict Prevention within the EEAS. While the creation

of another new EU agency might be viewed with mixed feelings, the decision to create an independent organisation should be judged not on the total number of EU agencies, but rather on whether independence from the EEAS makes sense or not. Arguments in favour of such an institutional arrangement can be found in the section on arms control in this paper. As a 'second best' solution, the mandate of the EEAS in the field of arms control should be strengthened and the relevant person responsible for this field (and not only the high representative of the Union for foreign affairs and security policy) should have direct access to the above-mentioned European institutions with respect to matters concerning arms control and disarmament.

- **Prepare for 'windows of opportunity' but also prepare for lean periods with little or no progress.**

Political realities change and sometimes this happens quite abruptly. This can lead to the opening of 'windows of opportunity' that allow significant progress to be made in a short space of time. However, these 'windows' can also close again quickly. At the same time, rapid changes can also happen with negative consequences. It helps to be prepared for this. While it is impossible to work out detailed plans for every possible scenario that can be imagined, it is nevertheless the right strategy to clearly identify one's own principles, requirements and needs, to identify areas of compromise as well as lines that must not be crossed, and to be aware of other players' intentions and interests. This helps to avoid surprises caused by new developments. These can be fundamental changes, like the breakdown of the Eastern Bloc in 1989 or the Arab Spring revolutions, but also smaller changes like an unexpected change in government or the emergence of new players on the scene.

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