



Dr. Dr. Hans Martin Sieg is an advisor on foreign affairs and security policy at the office of German parliamentary member Manfred Grund, and a lecturer at the Freie Universität Berlin.

A NUCLEAR-WEAPON-FREE WORLD? PRESIDENT OBAMA'S INITIATIVE FOR NUCLEAR DISARMAMENT

Hans Martin Sieg

On April 8th 2010, the new START treaty between the USA and Russia was signed, which will entail a further reduction in strategic nuclear weapons in both countries. A few days later, an international summit meeting took place at the invitation of the US president, attended by almost all nuclear nations, mostly with their heads of state or heads of government. For Barack Obama, these represent demonstrable successes in the policy he is pursuing towards comprehensive nuclear disarmament. Not only in the election campaign, but also as president, he had already acknowledged his aim of a nuclear-weapon-free world during his speech in Prague in April 2009.¹ In September, this objective was reinforced by a resolution by the United Nations Security Council, which had met specifically for this purpose on Obama's initiative at a head of state and government level.² In December, he received the Nobel Peace Prize for it. A commitment to the disarmament and ultimately the abolition of nuclear weapons is already contained in the Non-Proliferation Treaty. However, the nuclear powers have so far treated it significantly more reservedly as a long-term objective where the political requirements for realization have still to be created. The priority allocated to this task by Obama is new. Associated with this is the political risk of raising expectations that cannot be fulfilled. Therefore even Obama has always pointed out that the goal of a nuclear-weapon-free world can only be achieved in the long-term, possibly not even

1 | Cf. Remarks by President Obama, Hradcany Square, Prague, April 5, 2009, <http://www.whitehouse.gov/> (accessed May 20, 2010).

2 | Cf. Resolution 1887, September 24, 2009.

within his lifetime, as he stressed in Prague. So which political considerations is he following?

Two considerations in particular will have been crucial. To take on a pioneering role in nuclear disarmament on the one hand opens up the chance of increasing the international prestige of the USA. On the other hand, the concern that neither control measures nor deterrence can guarantee protection against the proliferation or use of nuclear weapons is also likely to have been influential. Obama's disarmament initiative also offers the opportunity to increase pressure on other nations to dispense with nuclear arms. Without disarmament efforts and concessions by the nuclear powers, the effectiveness of the Non-Proliferation Treaty, whose latest review conference began in May 2010, must also remain questionable. The IAEA's controls have not proven to be effective enough to prevent a proliferation of nuclear weapons. However, a stricter monitoring system will be felt to be discriminatory by many non-nuclear powers. Likewise, with civilian use of atomic power, the risks of military abuse grow.

The fact that he can be sure of backing from prominent foreign affairs and security politicians is likely to be significant to the president's decision to give nuclear deterrence such a high priority. In the USA, the topic has developed in recent years from a popular yet idealistically-viewed goal to a motif behind which more and more foreign affairs elites rally. Henry Kissinger and George Shultz, Sam Nunn and William Perry established a bi-partisan initiative for global nuclear disarmament³ which quickly met with a positive response among renowned experts domestically⁴ and abroad. Worldwide, coalitions such as the Global Zero Commission purposefully seek to gather leading personalities for the objective of a nuclear zero option.⁵ In Germany, the initiative by Kissinger, Perry, Nunn and Shultz was supported by a joint declaration by Helmut Schmidt, Richard von Weizsäcker,

Two considerations in particular will have been crucial. To take on a pioneering role in nuclear disarmament on the one hand opens up the chance of increasing the international prestige of the USA. On the other hand, the concern that neither control measures nor deterrence can guarantee protection against the proliferation or use of nuclear weapons is also likely to have been influential.

3 | Cf. George P. Shultz et al., "A World Free of Nuclear Weapons", *The Wall Street Journal*, January 4, 2007.

4 | Cf. George P. Shultz et al., "Toward a Nuclear-Free World", *The Wall Street Journal*, January 15, 2008.

5 | Cf. <http://www.globalzero.org> (accessed May 20, 2010).

Egon Bahr and Hans-Dietrich Genscher, which included a call for the remaining nuclear weapons in the Federal Republic to be removed.⁶ At the instigation of the FDP, a corresponding coalition agreement was established with the CDU/CSU⁷ and since then reinforced by a resolution in the Bundestag tabled by all parties other than the left.⁸

Is nuclear deterrence globally dispensable, and under what circumstances? Would the abolition of nuclear weapons actually lead to greater security?

In principle, the goal of abolishing nuclear weapons enjoys broad support, but its realization raises a multitude of practical questions. Is nuclear deterrence globally dispensable, and under what circumstances? Would the abolition of nuclear weapons actually lead to greater security? How can this objective be achieved? And how can it be guaranteed that a general renunciation would actually be adhered to? What prospects of success does the president's initiative have? Is the goal of comprehensive nuclear disarmament actually his immediate focus? Or is his priority first of all a more effective anti-proliferation regime?

The fundamental challenges, obstacles and starting points for nuclear disarmament will be pursued below. First it will be asked whether and to what extent comprehensive nuclear disarmament can be a sensible alternative to maintaining a nuclear deterrent. Secondly, the specific interests pursued by existing or potential nuclear powers with their respective nuclear weapons will be investigated, in order to estimate the political requirements for disarmament agreements. Thirdly, the concrete starting points for nuclear disarmament measures should be discussed, especially with regards to their technical pre-requisites. Finally, a forecast is made of the parameters under which a full renunciation of nuclear weapons is likely to be possible.

DETERRENCE AND ITS LIMITS

During the Cold War, the objective of nuclear disarmament ultimately remained illusory despite a series of arms limitation

6 | Cf. Helmut Schmidt et al., "Für eine atomwaffenfreie Welt", *Frankfurter Allgemeine Zeitung*, January 9, 2009.

7 | Cf. "Wachstum. Bildung. Zusammenhalt.", coalition agreement between CDU, CSU and FDP, October 26, 2009, 120.

8 | Cf. "Deutschland muss deutliche Zeichen für eine Welt frei von Atomwaffen setzen", proposal by CDU/CSU, SPD, FDP and Bündnis 90/Die Grünen, Bundestag printed paper 17/1159, adopted on March 26, 2010.

agreements (SALT). Yet nuclear deterrence contributed to the prevention of a major escalation of the East-West conflict. After the end of the Cold War, there was a massive reduction in both superpowers' nuclear weapons stockpiles, and to a lesser extent those of Great Britain and France. At the same time, however, nuclear proliferation gained increasing importance in the security strategy of all western actors; and as unilateral ownership or deployment of nuclear weapons can represent a decisive advantage in a conflict, nuclear deterrence has therefore not at all become obsolete. President Obama made it explicitly clear in his Prague speech that the USA would stand by it "as long as these weapons exist".

However, if nuclear deterrence can reliably guarantee security, there is no reason to contemplate complete nuclear disarmament. This is precisely the point on which opinions about the president's initiative diverge. If deterrence is reliable, then a comprehensive renunciation of nuclear weapons is only sensible – and would then arise of its own accord – if there were no longer a threat of violent conflicts between actors capable of their manufacture. Until then, however, a reduction of nuclear-armed states must not necessarily be sought after. Provided that peacekeeping is given priority over other goals, then the dictum of Kenneth Waltz would instead apply: "More may be better".⁹ However, the problem with this position is not only that peacekeeping would potentially receive no such absolute priority over other political and humanitarian requirements. There is also no agreement that deterrence can in fact provide so certain a guarantee of this goal.

During the Cold War, the objective of nuclear disarmament ultimately remained illusory despite a series of arms limitation agreements (SALT). Yet nuclear deterrence contributed to the prevention of a major escalation of the East-West conflict.

During the Cold War, intensive debates began about the reliability of deterrence concepts. In the end, they revealed more problems than they were able to solve. Naturally, it can be presumed that nuclear deterrence changes the calculation of benefit and risk in the case of conflict to the detriment of a violent escalation. Due to the devastating effect of nuclear weapons, however, it is not enough to simply reduce escalation risks. It is not the probability of

9 | Kenneth N. Waltz, "More May be Better", in Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (London and New York: 1995), 1 - 45.

an escalation, or the presumable rationality of the actor's behaviour, but the remaining residual risks in each case which are the crucial criteria. Such residual risks, however, are not only to be found in technology and the related dangers of false alarms and the security of nuclear weapons. The logic of nuclear deterrence itself contains intrinsic contradictions.

Nuclear deterrence is not only based on weapons potential; it is also a "state of mind"¹⁰ and depends on a series of psychological variables on both sides. Thus the opponent must know the lines that he should not cross, and possess the political decision-making freedom to respect them; he must consider the threat credible and the risk unacceptable. Martin van Creveld argues that due to the devastating effect of nuclear weapons, with mutual deterrence there is no plausible concept for their use.¹¹ But even if this is true, this does not apply to the threat of nuclear war. The actors' perceptions of each other is a crucial factor, as if an actor believes another is significantly less willing to take risks than they are themselves, they can speculate that they present a sufficiently credible escalation threat. The aggressive rhetoric of North Korea for

Nuclear deterrence is not only based on weapons potential; it is also a "state of mind" and depends on a series of psychological variables on both sides. Thus the opponent must know the lines that he should not cross, and possess the political decision-making freedom to respect them; he must consider the threat credible and the risk unacceptable.

instance would be patently suicidal if the USA had the same degree of willingness for escalation as Pyongyang signalizes. Deterrence can therefore be not only a defensive, but also an offensive concept. Nuclear deterrence rests on the premise that while each actor wants to avoid nuclear escalation at all costs, they must have a credible willingness to escalate, at least from the point of view

of the respective opponent. This paradox allows latitude for "brinkmanship"¹² politics – but also for fatal miscalculations.

The effectiveness of nuclear deterrence therefore depends more on the willingness of actors to take risks than on their rationality. If deterrence is based on the ability to retaliate, it is crucially based on the possibility of irrational reactions. The threat in deterrence is rational, but its realization would be so only in very limited circumstances – for instance if a counter-strike could achieve the certain destruction of even greater

10 | Lawrence Freedman, *Deterrence* (Cambridge: 2004), 116.

11 | Martin van Creveld, *Die Zukunft des Krieges. Wie wird Krieg geführt und warum?*, 3rd Edition (Hamburg: 2004), 23 - 34.

12 | Thomas C. Schelling, *Arms and Influence* (New Haven: 1966), 98 f.

threat potential. Otherwise, the logic of deterrence fails the instant it has no effect. A retaliatory strike per se would only represent an act of revenge towards many thousands, perhaps millions of mostly innocent people. However, if the irrationality of reaction is an essential component of the calculation, the risk arises that deterrence will fail because, rightly or wrongly, it is not evaluated as sufficiently credible. Would a decision-maker actually order the retaliatory strike? In the Cold War, the nuclear powers attempted to neutralize this problem by automating the process for a counter strike as far as possible. Thus an opponent's chances of speculating on individual consideration processes were cut. The western nuclear powers and Russia have since lowered the readiness level of their nuclear forces in order to gain more reaction time in the event of conflicts and be able to prevent escalation. Precisely because they cut the time for such decision-making processes, the brevity of reaction times during the Cold War contributed to deterrence, but naturally also raised other risks, such as in the event of false alarms.

Between nuclear powers, deterrence theoretically depends crucially on their respective second strike capabilities. If these do not exist, or only to a limited extent, in the event of a conflict each side is faced with the decision to launch a pre-emptive strike or to potentially suffer. Due to the permanent evolution of weapons systems, this risk could never be completely eliminated, even between the superpowers in the Cold War, particularly as since the development of submarine-supported missiles the survival of the respective political leadership can no longer be safeguarded. However, even an assured capacity for mutual destruction does not amount to a reliable deterrent. Precisely this problem was posed by the principle of Mutual Assured Destruction during the Cold War. In such a scenario, there is no longer any plausible nuclear weapons deployment option for a defensively oriented actor. A first strike threatens to lead to self-destruction, while a retaliatory strike causes mass destruction which presumably does not agree with the moral reservations of the decision maker. However, if plausible deployment options are lacking, aggressive actors may not be deterred by conventional or nuclear attacks.

Despite his destructive potential, the opponent would thus be faced with a decision situation in which there are no sensible alternatives to surrender. If deterrence allows the avoidance of nuclear escalation to become the opponent's highest maxim, limited nuclear strikes can once again appear a rational means.¹³ Due to their relative conventional inferiority, NATO strategies in the Cold War thus provided for nuclear first strikes in the same way as Russia's military maneuvers in more recent times.¹⁴ During the Cold War, nuclear strategists such as Albert Wohlstetter came to the conclusion that a realistic option of limited nuclear strikes with tactical weapons against military targets and therefore the capacity for an incremental

Between nuclear powers, deterrence theoretically depends crucially on their respective second strike capabilities. If these do not exist, or only to a limited extent, in the event of a conflict each side is faced with the decision to launch a pre-emptive strike or to potentially suffer.

nuclear escalation were required. NATO's strategy of flexible response was already based on this consideration. Dependent on the mindset of the actors, nuclear deterrence is thereby based as much on the non-manageability as the manageability of nuclear war. Today, some nuclear powers are attempting to increase the accuracy of their nuclear missiles and at the same time to reduce their explosive power, in order to allow equally targeted as limited strikes against political and military centers and therefore to create realistic deployment scenarios. Resulting from this is the significance of "tactical" nuclear weapons as a credible deterrent, as used within the scope of NATO's nuclear sharing; reaction times may be longer, but they can hit their targets much more accurately and with less destructive power than most strategic weapons that can be most effectively used against population centers.

In the Cold War, the two main actors adapted both their understanding of deterrence and their respective behavioural roles to each other. A similar degree of reciprocity and adaptation can no longer be simply assumed in a more complex future actor structure, however, as the possibility must increasingly be expected that nuclear powers become indirectly involved with each other in conflicts via third parties, without clearly defined limits of action and with a

13 | Cf. Hermann Kahn, *Thinking about the Unthinkable in the 1980s* (New York: 1984), 59 ff.

14 | Cf. Nikolai Sokov, "Russia's Nuclear Doctrine", *NTI Issue Brief*, August 2004, http://nti.org/e_research/e3_55a.html (accessed May 20, 2010).

far greater danger of misunderstandings and miscalculations. Imagine that a nuclear-armed Iraq had occupied Kuwait and then pushed forward to Saudi Arabia. The problem would not have been the prevention of aggression, but its revision. Would deterrence have prevented an escalation, and if so, would the aggressor have been deterred, or other actors deterred from intervention? It should be added that new nuclear powers in particular have no second strike capabilities for decades, only first strike capabilities. In the event of conflict, this would fundamentally increase the uncertainty for all involved, particularly as they mostly use the same weapons systems to carry both conventional and nuclear attacks, which limits their distinguishability. Aside from this, at first new nuclear powers presumably do not have the required guidance and control systems in order to steer their crisis behaviour according to plan and safely prevent unauthorized deployments.

In the Cold War, the two main actors adapted both their understanding of deterrence and their respective behavioural roles to each other. A similar degree of reciprocity and adaptation can no longer be simply assumed in a more complex future actor structure.

In the end, a great deal of uncertainties remain. This does not mean that deterrence would be ineffective. The possibility of a nuclear counterstrike creates a disparately higher risk in the event of an escalation than any other form of reaction – and in the circumstances represents the only means to oppose the deployment of nuclear weapons. Nuclear deterrence possesses a high degree of plausibility, yet there also remains a residual risk that should not be ignored. To consider it ineffective and already dispensable would be as dangerous as unlimited trust in its reliability. Deterrence and disarmament should therefore be understood as complimentary components of a nuclear strategy, rather than contradictory.

INTERESTS OF NUCLEAR POWERS

The knowledge and means to build nuclear weapons are in the world and will remain so. The number of actors who have the required abilities is increasing. The economic outlay for the production of nuclear weapons is falling. Viewed abstractly, this development justifies doubts as to whether further proliferation of nuclear weapons can be stopped, never mind whether their complete abolition could be achieved. From a concrete point of view, however, the

number of relevant actors is a great deal more manageable. This is not only due to the fact that the technological cost of developing and producing nuclear weapons is still very time-intensive and so high that only a minority of states would be in a position to do so. In addition, most states with the capability to build nuclear weapons have not done so. There are essentially four reasons for this. Firstly, anti-proliferation regimes have not only hampered the transfer of technology, but also created considerable disadvantages for governments who try to obtain nuclear weapons. They are far more likely to make a country a pariah in the international system than to bring an increase in status. In the course of their democratic transformation, Brazil and Argentina have ended the nuclear weapons programs begun under military governments. South

In the course of their democratic transformation, Brazil and Argentina have ended the nuclear weapons programs begun under military governments. South Africa has scrapped its nuclear weapons again.

Africa has scrapped its nuclear weapons again. Aside from Russia, all former-USSR states have eschewed them. The proliferation network of the "father of the Pakistani atom bomb", A. Q. Khan, was uncovered and destroyed by western secret services.¹⁵ Secondly, the use of military means or military pressure has prevented weapons programs. Thus the fear of intervention is likely to have contributed to Libya ending its weapons program itself in 2003 after revelations in conjunction with the exposure of the Khan network. The Iraqi nuclear weapons program experienced a decisive setback through the bombing of the Osirak reactor by the Israeli air force in 1981. Likewise, a Syrian nuclear weapons program apparently begun with North Korean support was destroyed at the end of 2007.¹⁶

Thirdly, safeguards particularly from the USA provide a vital contribution to the security of many non-nuclear powers. Japan could build nuclear weapons at short notice

15 | Cf. David Albright and Corey Hinderstein, "Unraveling the A. Q. Khan and Future Proliferation Networks", *The Washington Quarterly* 28, no. 2 (2005), 111 - 28.

16 | Cf. David Albright and Paul Brannan, *Suspect Reactor Construction Site in Eastern Syria: The site of the September 6 Israeli Raid?*, Institute for Science and International Security, October 23, 2007, http://www.isis-online.org/publications/SuspectSite_24October2007.pdf (accessed May 20, 2010); David Albright and Paul Brannan, *Syria Update: Suspected Reactor Site Dismantled*, Institute for Science and International Security, October 25, 2007, <http://www.isis-online.org/publications/SyriaUpdate25October2007.pdf> (accessed May 20, 2010).

if regional threats became more serious. Fourthly, only a few potential aggressors can expect a practical deployment of nuclear weapons; for most states, this would be extremely limited. If nuclear weapons are only intended to serve the country's own security, they exploit new latitude less than they require consideration of potential opponents. The risks created for others in the event of conflict by the pursuit or ownership of nuclear weapons can prompt them to begin their own arms programs or preventative strikes. For example, Egypt could have developed nuclear weapons. However, considering the potentially suicidal consequences, it would have also given up any ability to handle conflict with Israel. The Yom Kippur War would have represented an insupportable risk if both sides had owned nuclear weapons.

The purposes that nuclear weapons and a nuclear deterrent are intended to or can serve can therefore only be generalized to a limited extent. For most countries, their own security is at best indirectly dependent on nuclear weapons, and not on the possession of them.

The purposes that nuclear weapons and a nuclear deterrent are intended to or can serve can therefore only be generalized to a limited extent. For most countries, their own security is at best indirectly dependent on nuclear weapons, and not on the possession of them. The reasons which cause states to maintain nuclear weapons or to seek to obtain them are thus rather to be sought in their particular interests. The disarmament measures which are possible in a foreseeable timeframe must therefore first be judged with reference to the agenda followed by existing or potential nuclear powers with their nuclear weapons.

THE FIVE NUCLEAR POWERS RECOGNISED IN THE NPT

After the end of the Cold War, the USA's nuclear weapons policy followed two different and at times contrary lines of development. On the one hand, the importance of nuclear forces as well as the infrastructure required for their maintenance and development sank within the military and in comparison with other arms industries. Even before Obama, nuclear weapons held a lower priority in American defence policy than in any other nuclear power – which already led to problems in the maintenance of required technical abilities and high professional standards¹⁷; and

17 | Cf. Michael Paul and Oliver Thränert, *Nukleare Abrüstung und Rüstungskontrolle. Ausblick auf die amerikanisch-russischen Verhandlungen*, SWP-Studie (Berlin: March 2009), 12 f.

unlike in other nuclear powers, existing weapons systems were modernized, but little was invested in the development of new nuclear weapons and carrier systems. Sooner or later, the question of successive replacement of the existing weapons systems is not likely to be able to be circumvented. The financing of the program for a new Reliable Replacement Warhead (RRW) as a replacement for the Trident SLBM W-76 warhead, controversial with regards to its reliability, was not set by Congress until 2009 in agreement with the Obama administration.¹⁸ Critics of the president refer, not without reason, to the questions that are raised by this development for the USA's ability to guarantee a reliable long-term nuclear deterrent.¹⁹

On the other hand, however, various concepts have been developed in order to adapt nuclear deterrence to the more complex strategic challenges since the Cold War. The accuracy of nuclear warheads was thus further improved, which allows even particularly protected military targets to be destroyed. Under the Bush administration, plans were occasionally followed for the development of so-called "mini nukes" or nuclear "bunker busters". In addition, the nuclear deterrent or the deployment scenarios for nuclear weapons were also extended to the increased threat through other weapons of mass destruction. The USA fundamentally adhered to the negative security assurance provided in the Non-Proliferation Treaty, which precludes the use of nuclear weapons by those within the treaty regime in conflicts purely against non-nuclear powers. At the same time, however, they adopted a policy of "calculated ambiguity" towards Saddam Hussein in the 1991 Gulf War with regards to potential nuclear retaliation against attacks with biological or chemical agents. The Nuclear Posture Review by the Pentagon in 2002 and the Joint Nuclear Operations Doctrine of US forces in 2005 generally and openly linked the nuclear deterrent to threats from

The USA fundamentally adhered to the negative security assurance provided in the Non-Proliferation Treaty, which precludes the use of nuclear weapons by those within the treaty regime in conflicts purely against non-nuclear powers.

18 | Cf. Jonathan Medalia, *The Reliable Replacement Warhead Program: Background and Current Developments*, Congressional Research Service Report for Congress, July 27, 2009, 1.

19 | Cf. The New Deterrent Working Group, *U.S. Nuclear Deterrence in the 21st Century: Getting it Right*, Center for Security Policy, July 2009, <http://www.centerforsecuritypolicy.org> (accessed May 20, 2010).

other weapons of mass destruction and provided for the possibility of a nuclear preventive strike against biological or chemical weapons in the event of conflict.²⁰

In April 2010, the Obama administration presented a new Nuclear Posture Review which, unlike previous reports, was also made publicly accessible. In compliance with the president's promise of wishing to reduce "the role of nuclear weapons in our national security strategy", as previously stated in Prague, non-nuclear powers that have joined the Non-Proliferation Treaty and adhere to its terms will now only be threatened with a devastating conventional counter-strike, even in the event of an

attack with biological or chemical weapons.²¹ Disarmament steps over and above the new START treaty are explicitly contemplated, under the condition that this takes place in essential parity with Russia. In particular, it

Disarmament steps over and above the new START treaty are explicitly contemplated, under the condition that this takes place in essential parity with Russia.

aims at the inclusion of non-strategic weapons in further disarmament talks with Moscow.²² In order to plan ahead for the future proliferation of nuclear weapons, however, the Nuclear Posture Review provides for a strengthening of security assurances towards allies and therefore also of the nuclear deterrent to new nuclear powers. In this context, the significance of nuclear sharing for cohesion and security within NATO will be emphasized²³ – even with respect to an inclusion of tactical nuclear weapons in disarmament talks with Russia.

20 | Cf. Department of Defense, Nuclear Posture Review Report, submitted to Congress on December 31, 2001, Excerpts, January 8, 2002, <http://www.globalsecurity.org/wmd/library/policy/dod/npr.htm> (accessed May 20, 2010); Doctrine for Joint Nuclear Operations, Final Coordination (2), 15 March 2005, http://www.globalsecurity.org/wmd/library/policy/dod/jp3_12fc2.pdf (accessed May 20, 2010).

21 | Cf. Department of Defense, *Nuclear Posture Review Report*, April 2010, 15 f.

22 | Cf. Nuclear Posture Review 2010, 27 - 30.

23 | Cf. Nuclear Posture Review 2010, 32.

Great Britain and France support plans for nuclear disarmament²⁴, even though French rhetoric with regards to a complete renunciation of nuclear weapons has remained significantly more restrained. At the same time, however, both powers have formulated reservations which go further than President Obama. Firstly, both regard their latitude in nuclear disarmament as largely exhausted. The limit of a sufficiently credible deterrent has been reached for them, and a substantial retreat from this line would have to be based on global reciprocity.²⁵

Great Britain and France support plans for nuclear disarmament, even though French rhetoric with regards to a complete renunciation of nuclear weapons has remained significantly more restrained. At the same time, however, both powers have formulated reservations which go further than President Obama.

France has reduced its nuclear forces to four strategic nuclear submarines (SSBN) and a limited number of bombs and cruise missiles, as well dismantling its facilities for producing weapons-grade materials. Prime Minister Brown has announced Great Britain's willingness to reduce the number of its SSBNs from the current four to three²⁶, which would reach the minimum required to allow a permanent patrol of one submarine, thus ensuring a second strike capability. In this context, France speaks of "strict sufficiency"²⁷, Great Britain of the maintenance of a "minimum nuclear deterrent capability"²⁸.

Secondly, both states justify their persistence with nuclear deterrence not only by the potential emergence of new

24 | Cf. Foreign and Commonwealth Office, *Lifting the Nuclear Shadow: Creating the Conditions for Abolishing Nuclear Weapons*, February 2009, <http://www.fco.gov.uk> (accessed May 20, 2010); Cabinet Office, *The National Security Strategy of the United Kingdom: Security in an Interdependent World*, March 2008, <http://www.cabinetoffice.gov.uk> (accessed May 20, 2010); The French White Paper on Defence and National Security, June 2008, <http://www.defense.gouv.fr> (accessed May 20, 2010), 112.

25 | Cf. Discours de M. le Président de la République à l'occasion de la présentation du SNLE "Le Terrible", Cherbourg, March 21, 2008; The French White Paper on Defence, 113; The United Kingdom calls for all nuclear powers to disarm to the absolute minimum nuclear deterrent capacity that Great Britain has already reached; Foreign and Commonwealth Office, *Lifting the Nuclear Shadow*, 29.

26 | Cf. Gordon Brown, Speech to UN General Assembly, September 23, 2009, <http://www.number10.gov.uk> (accessed May 20, 2010).

27 | The French White Paper on Defence, 112.

28 | Ministry of Defence, *The Future of the United Kingdom's Nuclear Deterrent*, December 2006, <http://www.mod.uk> (accessed May 20, 2010), 8.

atomic powers – in particular Iran.²⁹ London also puts forth the additional argument of the unpredictability of new nuclear threats in coming years³⁰, while Paris argues the dangers that can arise from the future development of technology for the production of weapons of mass destruction.³¹ Great Britain also explicitly relates its nuclear deterrent to the possibility of state-supported terrorist attacks with nuclear weapons.³² Nicolas Sarkozy, meanwhile, more strongly highlights the restrictive nature of the French deterrent. President Chirac also threatened nuclear retaliatory strikes against state terrorist acts.³³ In comparison with the USA, both states are wary of the problem of only being able to counter the emergence of new threats in a far more limited capacity using conventional forces. The willingness of Great Britain and France to undertake substantial further steps towards disarmament is therefore only likely if two conditions were fulfilled: firstly, the construction of a more effective anti-proliferation regime which would effectively deny countries such as Iran or North Korea access to nuclear weapons, and secondly, the condition that other nuclear powers first reduce their stockpiles to a comparable level.

The willingness of Great Britain and France to undertake substantial further steps towards disarmament is therefore only likely if two conditions were fulfilled: firstly, the construction of a more effective anti-proliferation regime which would effectively deny countries such as Iran or North Korea access to nuclear weapons, and secondly, the condition that other nuclear powers first reduce their stockpiles to a comparable level.

Russia has also reacted fundamentally positively to Obama's venture. However, this resulted from their interest in treaties which would allow them to maintain nuclear parity with the USA as far as possible. The fact that Russia is undertaking major efforts towards modernizing its strategic nuclear weapons³⁴ shows the importance of

29 | Cf. Brown, Speech to UN General Assembly, September 23, 2009; Discours de M. le Président de la République à l'occasion de la présentation du SNLE "Le Terrible", Cherbourg, March 21, 2008.

30 | Cf. The National Security Strategy of the United Kingdom, 31; The Future of the United Kingdom's Nuclear Deterrent, 19.

31 | Cf. The French White Paper on Defence, 64.

32 | Cf. The Future of the United Kingdom's Nuclear Deterrent, 19.

33 | Cf. Allocution de M. Jacques Chirac, Président de la République, lors de sa visite aux forces aériennes et océanique stratégiques, January 19, 2006, <http://www.elysee.fr> (accessed May 20, 2010).

34 | Cf. Margarete Klein, Russlands Militärpotential zwischen Großmachtsanspruch und Wirklichkeit. Zustand, Reformen und Entwicklungsperspektiven der russischen Streitkräfte, *SWP-Studie* (Berlin: October 2009), 22 - 5.

this aim. Its nuclear weapons represent the only potential to raise Russia above a regional power, and are therefore closely related to its international status. Nonetheless, Russia is faced with the problem of having to decommission a majority of its strategic nuclear weapons due to obsolescence, which can only be replaced by a much lower number of modern systems for economic reasons. The condition and state of readiness of Russian nuclear weapons have already raised doubts as to whether Russia still has a guaranteed second strike capability towards the USA under all circumstances.³⁵ According to its security strategy of March 2009, Russia itself feels threatened by western powers' pursuit of strategic nuclear superiority.³⁶ In disarmament talks with the USA, Russia is primarily concerned with agreeing bilateral reductions which it would otherwise have to make unilaterally.

More comprehensive disarmament steps, however, run contrary to two further functions of Russian nuclear weapons. Firstly, they serve as a deterrent to China and other nuclear powers in Asia. As these states predominantly threaten Russia with medium-range missiles, a unilateral disadvantage in the INF treaty has long been recognized within Russia.³⁷ Secondly, nuclear weapons are also intended to compensate for Russia's conventional military weaknesses. Thus Chief of Staff Makarow justified the maintenance of tactical nuclear weapons indirectly by the military superiority of NATO in Europe.³⁸ The secretary of the Security Council, Nikolai Patrushev, additionally indicated that the newest revision of military doctrine was also to include include a restriction with regards to

In disarmament talks with the USA, Russia is primarily concerned with agreeing bilateral reductions which it would otherwise have to make unilaterally.

35 | Cf. Keir A. Lieber and Daryl G. Press, "The End of MAD? The Nuclear Dimension of U.S. Primacy", *International Security* 30, no. 4 (2006), 7 - 44.

36 | Cf. Strategija nacional'noj bezopasnosti Rossijskoj Federacii do 2020 goda, May 15, 2009, <http://www.scrf.gov.ru> (accessed May 20, 2010).

37 | Cf. "Russia may unilaterally quit INF Treaty", RIA Novosty, February 15, 2007, <http://en.rian.ru> (accessed May 20, 2010); Hannes Adomeit and Alexander Bittner, "Russland und die Raketenabwehr. Wer spaltet wen?", *SWP-Aktuell* (Berlin: April 2007), 5.

38 | Cf. "Russian Military Chief Defends Nonstrategic Nukes", *Global Security Newswire*, December 17, 2008, <http://www.globalsecuritynewswire.org> (accessed May 20, 2010).

pre-emptive nuclear strikes against potential aggressors.³⁹ However, there is no such explicit provision in the new military doctrine adopted in February 2010. Even before, Russian nuclear doctrine provided for a limited first deployment of nuclear weapons in the event of a large-scale attack.⁴⁰ In the new military doctrine, the nuclear deterrent is also fundamentally allocated the function of deterring conventional aggression in the scope of regional conflict. Explicitly, Russia retains the use of nuclear weapons under three conditions: firstly, the use of nuclear or – secondly – other weapons of mass destruction against Russia, as well as, thirdly, an attack with conventional forces, if this threatens the existence of the Russian state.⁴¹ Russia has an interest in reducing nuclear deterrence potential to a level that is economically sustainable for Moscow. Their readiness to undertake an additional renunciation of nuclear weapons, however, remains to be seen.

China supports the objective of complete abolition of nuclear weapons, yet sees it as a Russia and the USA's duty to first make concessions by cutting back their larger potential.

China supports the objective of complete abolition of nuclear weapons, yet sees it as a Russia and the USA's duty to first make concessions by cutting back their larger potential. Officially, the People's Republic follows a doctrine which precludes a first strike.⁴² This also corresponds to the conventional and nuclear balances of power towards other nuclear and non-nuclear powers. In the past, China has shown relative restraint in its nuclear armament. Its strategic deterrent has long been based on only a limited number of stationary liquid-fuel missiles which must be fuelled before launch and are accordingly vulnerable, so that at best it has a limited guaranteed second strike capability. However, China has since expanded its nuclear potential significantly, both qualitatively and quantitatively, particularly through

39 | Cf. "Russia's new military doctrine allows pre-emptive nuclear strikes", *RIA Novosty*, October 14, 2009, <http://en.rian.ru> (accessed May 20, 2010).

40 | Cf. Nikolai Sokov, "The Origins of and Prospects for Russian Nuclear Doctrine", *The Nonproliferation Review* 14, no. 2 (2007), 207 - 26.

41 | Cf. Voennaja Doktrina Rossijskoj Federacii, February 5, 2010, http://news.kremlin.ru/ref_notes/461 (accessed May 20, 2010).

42 | Cf. Information Office of China's State Council, *China's National Defense in 2008*, January 2009, <http://www.gov.cn> (accessed May 20, 2010).

India's nuclear weapons primarily serve as a deterrent to China and Pakistan. Under the condition of a possible nuclear retaliation against attacks with biological or chemical weapons, its nuclear doctrine precludes a nuclear first strike and is based on the policy of a "credible minimum deterrence".

the production of mobile intercontinental solid-fuel missiles as well as SSBNs.⁴³ China thereby achieves a far more credible second strike capability towards the USA, whose purpose is also likely to consist of making American intervention appear less probable in the event of armed conflict with Taiwan. Besides this, China's nuclear weapons, and in particular the majority of its medium-range missiles, serve as a deterrent to Russia and India. The help that China provided to Pakistan in the development of their nuclear weapons was also directed against India. With China's rise to a global power, its relevant security interests moreover expand globally. Further construction of weapons potential rather than downsizing is thus to be expected from China.

NUCLEAR POWERS OUTSIDE OF THE NPT: INDIA, PAKISTAN AND ISRAEL

India's nuclear weapons primarily serve as a deterrent to China and Pakistan. Under the condition of a possible nuclear retaliation against attacks with biological or chemical weapons,⁴⁴ its nuclear doctrine precludes a nuclear first strike and is based on the policy of a "credible minimum deterrence"⁴⁵. Accordingly, India is likely to have only manufactured a limited number of sixty to seventy operational warheads.⁴⁶ However, India concentrates on the production of carrier systems. In particular, submarine-supported cruise missiles, the development of their own SSBN, as well as mobile medium-range solid-fuelled missiles that can reach the whole of Chinese territory from

43 | Cf. Robert S. Norris and Hans M. Kristensen, "Chinese Nuclear Forces, 2008", *Bulletin of the Atomic Scientists* 64, no. 3 (2008), 42 - 5; Office of the Secretary of Defense, Military Power of the People's Republic of China 2009, March 2009, <http://www.defense.gov>, 24 f and 48 f.

44 | Cf. The Cabinet Committee on Security Reviews Operationalization of India's Nuclear Doctrine, January 4, 2003, <http://meaindia.nic.in/pressrelease/2003/01/04pr01.htm> (accessed May 20, 2010).

45 | Draft Report of National Security Advisory Board on Indian Nuclear Doctrine, August 17, 1999, <http://meaindia.nic.in/disarmament/dm17Aug99.htm> (accessed May 20, 2010).

46 | Cf. for information on the estimated sizes of nuclear arsenals: Shannon N. Kile, Vilaly Fedchenko and Hans M. Kristensen, "World Nuclear Forces", *SIPRI Yearbook 2009: Armaments, Disarmament and International Security* (Oxford: 2009), 346 - 79.

a large part of Indian territory, should guarantee a second strike capability. Compared with nuclear threat scenarios, conventional threats also play a role – in particular in view of China. However, this is of lesser importance as Pakistan would be a weaker opponent and defence against China would be benefited by geographical barriers, which also made the border conflict of 1962 a regionally limited conflict. In any case, India's willingness for nuclear disarmament will depend decisively on the stance of China and Pakistan. India admits to the aim of universal renunciation of nuclear weapons, but regards the problem of nuclear deterrence and disarmament as a global challenge. Prime Minister Singh has not explicitly rejected a "regionalization" of nuclear disarmament.⁴⁷

The nuclear deterrent potential of Pakistan not only serves as a deterrent against the deployment of Indian nuclear weapons, but is also intended to compensate for their conventional inferiority. Accordingly, Pakistan, who do not publish their nuclear doctrine, have not ruled out a first strike against India.⁴⁸ Whether a contrary statement by President Zardari in 2008⁴⁹ signifies a fundamental reorientation is doubtful. Pakistan has also hitherto relied on the principle of "minimum credible deterrence" and primarily on conventional forces for its defence. For security reasons, and because a high degree of alarm on both sides harbors considerable risks, it apparently keeps its warheads separate from carriers and depends on particularly protected storage facilities, their distribution and secrecy for its second strike capability. For one thing, however, Pakistan lacks strategic depth in comparison with India. For another, their technical advances in reconnaissance and the accuracy of weapons systems could lead to the increasing vulnerability

The nuclear deterrent potential of Pakistan not only serves as a deterrent against the deployment of Indian nuclear weapons, but is also intended to compensate for their conventional inferiority.

47 | Cf. Manmohan Singh, PM Inaugurates International Conference on "Towards a World Free of Nuclear Weapons", New Delhi, June 9, 2008, <http://pmindia.nic.in/Ispeech.asp?id=688> (accessed May 20, 2010).

48 | Cf. Peter R. Lavoy, *Pakistan's Nuclear Posture: Security and Survivability*, Nonproliferation Policy Education Center, January 21, 2007, <http://www.npec-web.org>, 4.

49 | Cf. Paul K. Kerr and Mary Beth Nikitin, "Pakistan's Nuclear Weapons: Proliferation and Security Issues", Congressional Research Service, *Report for Congress*, December 9, 2009, 7 note 41.

of Pakistani nuclear weapons to a first strike.⁵⁰ Although its nuclear weapons were originally based on enriched uranium, Pakistan is currently expanding its facilities for the extraction of plutonium, which allows the construction of lighter warheads, with which missiles' range can be increased and cruise missiles can be equipped. This indicates a modernization and expansion of the Pakistani nuclear weapons potential.⁵¹ Although Pakistan's situation regarding its nuclear deterrent towards India is becoming rather more precarious, it is not likely to agree to nuclear disarmament without a solution to the latent escalation-prone conflict points with India.

Israel stands by its policy of calculated ambiguity, leaving open the question of whether it possesses its own nuclear weapons and accordingly publishing no nuclear doctrine.⁵²

Israel stands by its policy of calculated ambiguity, leaving open the question of whether it possesses its own nuclear weapons and accordingly publishing no nuclear doctrine.

Due to the superiority of its conventional forces, Israel is exposed to a lower military threat from its neighbours today than at the start of its nuclear program; in this regard, the significance of nuclear weapons for securing its livelihood has fallen. However, Iran's nuclear program in particular, and also the uncertainties related to the political instability of Pakistan, have lent nuclear weapons new relevance as an ultimate life insurance. At the same time, they guarantee that Europeans and Americans remain strongly interested in the existential security of the country in the event of conflict. With the Jericho III, which was apparently successfully tested at the start of 2008, Israel has missiles which can reach the whole of the Middle East and Pakistan. Israel's second strike capability is likely to be based on particularly protected bases for its weapons systems and on

50 | Cf. Lavoy, Pakistan's Nuclear Posture, 12 and 17 f.

51 | Cf. Robert S. Norris und Hans Kristensen, "Pakistani Nuclear Forces, 2009", *Bulletin of the Atomic Scientists* 65, no. 5 (2009), 82 - 89, here 83 - 85.

52 | In his visit to the Federal Republic of Germany in 2006, Olmert spoke of Israel in the same breath as other nuclear powers. With this indirect admission that his country possesses nuclear weapons, Olmert broke a taboo of Israeli politics. Cf. hereto: "Olmerts Atomwaffen-Eingeständnis. Kluger Tabubruch?", *Frankfurter Allgemeine Zeitung Online*, December 12, 2006, <http://www.faz.net/s/RubA24ECD630CAE40E483841DB7D16F4211/Doc~E030DE4BB98FF486FBC0CEE2F4F16605B~ATpl~Ecommon~Scontent.html> (accessed May 26, 2010).

submarine-based cruise missiles; with the Arrow system it also has highly developed missile defence. Israel's strategic dilemma, however, lies in its lack of strategic depth in comparison with potential opponents, which faces the country with the danger of extensive destruction even in the case of a limited first strike. Israel must therefore fear that even with the availability of mutual nuclear deterrent potential, under the threat of escalation with Iran they would be put under far greater pressure than they can exert themselves. Former Iranian President Rafsandjani explicitly pointed out this Israeli disadvantage as early as 2001.⁵³ Although Israel, along with India and Pakistan, has also explicitly been invited to join the NPT by the relevant Assistant Secretary of the State Department in the Obama administration,⁵⁴ a renunciation of its nuclear potential is not likely to come into question for Israel as long as there is a risk that potentially hostile states can come into the possession of nuclear weapons.

NEW NUCLEAR POWERS: NORTH KOREA AND IRAN

The greatest uncertainties are related to the nuclear programs of new nuclear powers such as Iran and North Korea. North Korea left the Non-Proliferation Treaty in 2003 and by its own account carried out nuclear weapons tests in 2006 and 2009, which were both presumably only partially successful. North Korea is likely to have enough plutonium from its reactor in Yongbyon for six to ten atom bombs, which require more technically demanding construction than uranium bombs, but may also be working on uranium enrichment. There are also uncertainties in the case of Iran regarding the state of its nuclear program. This is documented by very cautious estimates of the US secret services from 2007 which assume "with high confidence" that Iran halted the development of nuclear weapons in the fall of 2003

North Korea is likely to have enough plutonium from its reactor in Yongbyon for six to ten atom bombs, which require more technically demanding construction than uranium bombs, but may also be working on uranium enrichment.

53 | Cf. George Perkovich, "Dealing With Iran's Nuclear Challenge", *Carnegie Endowment for International Peace*, April 28, 2003, <http://www.carnegieendowment.org>, 6.

54 | Cf. Opening Statement by Assistant Secretary of State Rose Gottemoeller, Head of the U.S. Delegation, at the Third Session of the Preparatory Committee for the 2010 Nuclear Non-Proliferation Treaty Review Conference, at United Nations Headquarters, New York, May 5, 2009, under <http://usun.state.gov> (accessed May 20, 2010).

due to international pressure, and “with medium confidence” that it has not since resumed.⁵⁵ Nonetheless, Iran seems to be determined to create the opportunity for the production of nuclear weapons. The evidence for this is that no other plausible purpose can be recognized for part of their uranium enrichment facilities as well as the heavy water reactor in Arak, their many years of cover-up tactics towards the IAEA, which have just been reconfirmed thanks to the recent exposure of a secret enrichment facility near to Qom⁵⁶, as well as the considerable disadvantages that the country accepts for this internationally. Demands by the UN Security Council to cease uranium enrichment activities and work on the reactor in Arak have not been met by Tehran.

Statements about the purposes that nuclear weapons should serve in both cases cannot be made without speculation. The Iranian nuclear program is to be viewed in the context of its thirst for regional power. For North Korea, its nuclear program represents almost the only

Iran and North Korea allow themselves to be subjectively assigned defensive motives. In fact, the nuclear programs have not increased their security for a long time, only reduced it, as the development of nuclear weapons is protracted and exposes them to the danger of a preventive war which they would otherwise not have to fear.

means to lend the country international importance and with which economic aid can be purchased or extorted. Iran and North Korea allow themselves to be subjectively assigned defensive motives. In fact, the nuclear programs have not increased their security for a long time, only reduced it, as the development of nuclear weapons is protracted and exposes them to the danger

of a preventive war which they would otherwise not have to fear. North Korea, with the concentration of artillery in range of the conurbation of Seoul, already has retaliatory potential which would have ruled out any military intervention – it was only considered seriously by the USA

55 | Cf. National Intelligence Council, *Iran: Nuclear Intentions and Capabilities, National Intelligence Estimate*, November 2007; Paul K. Kerr, “Iran’s Nuclear Program: Status, Congressional Research Service”, Report for Congress, December 29, 2009, 20 - 22.

56 | Cf. IAEA Board of Governors, *Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions 1737 (2006), 1747 (2007), 1803 (2008) and 1835 (2008) in the Islamic Republic of Iran*, Report by the Director General, November 16, 2009.

for the prevention of nuclear armament in 1994.⁵⁷ Iran's greatest external threat disappeared with the elimination of Saddam Hussein's regime in Iraq – which can also explain the presumable cessation of the Iranian nuclear weapons program at that time. However, the possession of nuclear weapons can also prevent other powers from deploying conventional forces. They are not able to offer protection from the nuclear potential of other powers such as the USA, or also Israel or Pakistan in the case of Iran, for the foreseeable future. On the contrary – as the development of movable warheads as well as the required carriers and infrastructure for a second strike capability takes much longer, Iran and North Korea only expose themselves to the increased threat of a pre-emptive nuclear strike.

In the best case, North Korea is likely to try to use its nuclear weapons to extort economic concessions, prevent obstructions of its weapons exports, and deter an expansion of South Korean forces and the USA on the Korean peninsula.

North Korea and Iran's nuclear weapons are thus first strike weapons, which can only serve as a deterrent to non-nuclear sanctions. This could mean that they might have aggressive intent, but above all are supposed to serve as protection. Iran has long been linked to comprehensive support of terror organizations and insurgents including in Lebanon, Shi'ite areas of Iran and parts of Afghanistan. The possession of nuclear weapons could cause Iran to expand these activities on the basis of the quite plausible expectation that it would be the western powers who would then be deterred from a decisive counter-reaction. It was probably this fear that caused Chirac's threat of nuclear retaliation towards state terrorist acts against France. In the best case, North Korea is likely to try to use its nuclear weapons to extort economic concessions, prevent obstructions of its weapons exports, and deter an expansion of South Korean forces and the USA on the Korean peninsula. On the basis of its desolate economic situation, its militarization and the extent of its conventional forces, the possession of nuclear weapons could however lower the inhibition level for aggression towards South Korea. As the example of Syria shows, North Korea is moreover prepared to export technology and materials for nuclear weapons production. Ballistic missiles are already one of the country's main exports.

57 | Cf. Ashton B. Carter and William J. Perry, *Preventive Defense: A New Security Strategy for America* (Washington D.C.: 1999), 128 f.

The governments of both countries cultivate aggressive enemy stereotypes. Propaganda purposes play a role here. Thus Iran's anti-Israeli rhetoric could also serve the purpose of invoking a common enemy among rival Arab

With regards to the range of ballistic missiles owned or under development by Tehran, Iranian nuclear weapons would give the USA's nuclear guarantees new importance even in Europe and in particular in the framework of NATO.

states and their populations, which impedes their governments from taking up a decisive stance against Iran themselves. However, even the most radical rhetoric can never be merely discounted as a pretext, for the simple reason that it is senseless, if not counter-productive, unless it fits the addressee's

beliefs and its followers are also convicted. Enemy images can reduce inhibition levels and increase the tolerance thresholds for the acceptance of the country's own losses above a comprehensible level. Added to this is the question of the long-term stability of the respective regime, where it remains uncertain which possible radical and ideologized forces could gain control of nuclear weapons. Even if actual nuclear weapon deployment represents an extreme scenario in both cases, too many variables remain unknown to be able to disregard this risk.

In contrast to the geopolitically extremely isolated North Korea, Iranian nuclear weapons would additionally threaten the security of a large number of countries in the Middle East, central Asia and Europe. Therefore rumors persist, for instance, about a nuclear option that Saudi Arabia will supposedly secure through cooperation with Pakistan.⁵⁸ It should be added that at the end of the 80s, Saudi Arabia purchased Chinese CSS-2 missiles whose lack of accuracy made their armament with conventional warheads ineffective, and that the Gulf States have been developing plans for a joint civilian nuclear program since 2006. No doubt to prevent entry into a new nuclear arms race, Secretary of State Clinton announced in July the USA's readiness to extend defence guarantees against Iran for their partner states in the region, which is likely to imply an expansion of the nuclear deterrent.⁵⁹ With regards to

58 | Cf. Akaki Dvali, "Will Saudi Arabia Acquire Nuclear Weapons?", Center for Nonproliferation Studies, Monterey Institute of International Studies, Issue Brief, March 2004; Richard L. Russell, "A Saudi Nuclear Option?", *Survival* 42, no. 2 (2001), 69 - 79.

59 | Cf. Hillary Rodham Clinton, Interview with Suttichai Yoon and Veenarat Laohapakakul on World Beat, Bangkok, July 22, 2009.

the range of ballistic missiles owned or under development by Tehran, Iranian nuclear weapons would give the USA's nuclear guarantees new importance even in Europe and in particular in the framework of NATO. For this reason, the USA had also planned to establish components of their strategic missile defence system in Poland and the Czech Republic,⁶⁰ which is now supposed to be replaced by a sea and land supported system against medium-range missiles in south-east Europe.⁶¹

STARTING POINTS FOR NUCLEAR DISARMAMENT

Whether it is possible to prevent Iran from producing its own nuclear weapons is likely to be crucially important to future prospects for nuclear disarmament. The future of North Korean nuclear weapons is likely to be essentially dependent on the development of the regime there. Among the remaining nuclear powers, loyalty to nuclear weapons depends on a series of more or less concrete conflicts and threat scenarios, without the elimination of which a renunciation of nuclear arms will not come into consideration.

Reductions can be achieved particularly in the

USA and Russia's strategic nuclear weapons.

The new START treaty stipulates upper limits of 1550 warheads and 800 carrier systems.⁶²

A next decisive step would be the inclusion of tactical nuclear weapons, of which Russia, deducting nuclear weapons for its strategic

missile defence, possesses just under an estimated 1400 operational warheads, considerably more than the USA.⁶³

At any rate, respective negotiations are likely to be complicated by the fact that these weapons are also a deterrent to conventional attacks for Moscow, and not only serve as a deterrent to the USA or NATO.

A next decisive step would be the inclusion of tactical nuclear weapons, of which Russia, deducting nuclear weapons for its strategic missile defence, possesses just under an estimated 1400 operational warheads, considerably more than the USA.

60 | Cf. Hans Martin Sieg, "Die strategische Bedeutung der Raketenabwehr. Russische Einwände und Bedrohungslage", *KAS-Auslandsinformationen* 6 (2008), 7 - 26.

61 | Cf. The White House, Fact Sheet on U.S. Missile Defense Policy: A "Phased, Adaptive Approach" for Missile Defense in Europe, September 17, 2009, <http://www.whitehouse.gov>.

62 | Cf. Treaty between the United States of America and the Russian Federation on Measure for the Further Reduction and Limitation of Strategic Offensive Arms, April 8, 2010, <http://www.state.gov/documents/organization/140035.pdf> (accessed May 20, 2010).

63 | Cf. Kile, Fedchenko, Kristensen, *World Nuclear Forces*, 354, 348.

Steps going significantly further than this depend on a limitation of Chinese nuclear arms. With regards to the continuing asymmetry in the nuclear potential of Russia and the USA on one side and China on the other, the requirements for an inclusion of disarmament negotiations with Beijing can hardly be met. The remaining nuclear powers have hitherto possessed the required minimum of weapons systems for the maintenance of a nuclear deterrent, in their understanding. For non-nuclear powers such as Germany, there are particularly incalculable risks which can take as a starting point Iran's nuclear programs and their possible effects on proliferation developments in the Middle East as well as the instability of Pakistan. This makes the nuclear security guarantees within the framework of NATO not only indispensable in the foreseeable future, but even increases their importance. Unilateral concessions such as the removal of the nuclear weapons stored in Germany under NATO's nuclear sharing will only weaken the position in future international negotiations about the future of tactical nuclear weapons and lower their own security rather than increase it. It remains a symbolic gesture which amounts to nothing more than its domestic political effect.

An actual nuclear zero solution will not be achievable in the foreseeable future. Nonetheless, the proclamation of this objective may serve two interconnected purposes.

Even in most western countries, the significance apportioned to the dangers of nuclear proliferation in government strategy papers does not correspond to a proportionate threat perception among the population.

Firstly, it can contribute to affording a higher international priority to nuclear disarmament and the combat of proliferation. The deficits that arise in this regard become visible, for instance, in the difficulty in organizing a common front for the five permanent members of the UN Security Council towards the Iranian nuclear program. A significant reason for this is that economic interests have gained greater weight than security interests. In this context, Michael Rühle once aptly spoke of an increasing "economization of security policy" since the end of the Cold War.⁶⁴ Even in most western countries, the significance apportioned to the dangers of nuclear proliferation in government strategy papers does not correspond to a proportionate threat perception

64 | Cf. Michael Rühle, "Die Ökonomisierung der Sicherheitspolitik", *Frankfurter Allgemeine Zeitung*, February 4, 2010.

among the population.⁶⁵ If it is possible here to strengthen awareness of the problem, the pressure to act can then be increased for all actors. At the same time, the objective of striving towards global nuclear disarmament and not only to combat further proliferation can strengthen the legitimacy and acceptance of measures for the construction of an effective nuclear control regime. The deficits present in the existing anti-proliferation regime, including the IAEA's monitoring options, have been shown by the cases of Iran, North Korea or the A. Q. Khan network.

For this purpose, to create a more effective control system, the primary direction of President Obama's initiative must be sought. It is not about achieving immediate global disarmament of nuclear weapons today, but limiting or removing the possibilities for developing and producing new nuclear weapons worldwide, and thus also removing the foundations for the preservation of existing potential on a long-term basis. The starting point for such a policy is offered by the creation of technical requirements essential for nuclear weapons, as facilities for the military or civilian use of nuclear power differ fundamentally and, provided that access is secure, can be fairly effectively controlled. The differing suggestions presented for nuclear disarmament for instance by the governments of France, Great Britain or even India or the private initiatives mentioned at the start⁶⁶ thus concentrate on technical aspects and requirements. They can roughly be divided into two categories. On one side, existing potential, if not eliminated, should be reduced and better protected against a potential weapons deployment; on the other side, the requirements for the production of weapons-grade material should be eliminated or effectively controlled.

The deficits present in the existing anti-proliferation regime, including the IAEA's monitoring options, have been shown by the cases of Iran, North Korea or the A. Q. Khan network.

65 | On the perception of threat in Germany, Cf. Thomas Bulmahn and Rüdiger Fiebig, *Sicherheits- und verteidigungspolitisches Meinungsklima in der Bundesrepublik Deutschland, Erste Ergebnisse der Bevölkerungsbefragung 2007 des Sozialwissenschaftlichen Instituts der Bundeswehr*, November 19, 2007, <http://www.sowi.bundeswehr.de>, 2.

66 | Cf. for instance the references in notes 3, 24, 26, 47.

To the first category belong demands to reduce the function of nuclear weapons in respective military doctrine to a purely strategic deterrent, as well as their respective readiness levels, in order to decrease possible threat scenarios for

Secondly, an effective global control of nuclear facilities would have to be created, from which even the nuclear armed states in the Non-Proliferation Treaty would not be excluded. For this, it would not only be necessary to extend the competences and capacities of the IAEA.

non-nuclear powers and the danger of false alarms or hasty decisions. Thus, for instance, the nuclear doctrine of Great Britain has, since 1998, allowed for the regular patrol of only one SSBN whose nuclear weapons are not pre-programmed with target coordinates and are only kept ready so that they can be fired within a few days, and not at any moment.⁶⁷ A problem in this regard is also posed by carrier systems with short ranges and low advance warning times, which can often also be equipped with nuclear as well as conventional warheads. In addition to this, the security of nuclear weapons and weapons-grade material from unauthorized access must be guaranteed worldwide. The USA in particular has contributed to increasing the security of nuclear installations and weapons in the former Soviet Union and also in Pakistan with appropriate programs. After all, the USA and Russia in particular would have to expedite the destruction of the large stockpiles of nuclear warheads and weapons-grade material no longer required for strategic deterrence. During and after the Washington nuclear security summit, a series of states gave up highly enriched material or pledged to deplete it.

Measures in three areas should be allocated to the second category. Firstly, the nuclear test ban would have to be maintained, as without tests the reliability of nuclear warheads remains ultimately uncertain, especially for new nuclear powers. Secondly, an effective global control of nuclear facilities would have to be created, from which even the nuclear armed states in the Non-Proliferation Treaty would not be excluded. For this, it would not only be necessary to extend the competences and capacities of the IAEA. With regards to the worldwide expansion of the civilian use of nuclear energy, a limitation to reactor technology would also be offered. Above all, however, it would depend on guaranteeing effective international control of uranium enrichment and refurbishment, which

67 | Cf. Ministry of Defence, *The Future of the United Kingdom's Nuclear Deterrent*, 13.

would overcome the deficits of the existing IAEA monitoring regime in that it would restrict the power of control over the technology required to produce weapons-grade materials from the outset. Thus the operation of appropriate facilities would remain limited to those where effective control was guaranteed. Conversely, access to fuel for the civilian use of nuclear energy would have to be guaranteed for all states through the Nuclear Suppliers Group or the IAEA. Thirdly, the production of weapons-grade materials could then be ended worldwide. Taken together, these measures would have the result of effectively freezing the existing weapons potential and that further reductions in the future could only be reversed with difficulty.

A GLOBAL ZERO SOLUTION?

Whether such far-reaching measures could in fact be realized is, however, very doubtful. A step towards this would be an adaptation and expansion of the existing treaty system, in particular the Non-Proliferation Treaty. As a comprehensive disarmament regime would have to include India, Pakistan and Israel, their recognition as nuclear powers is likely to be a pre-requisite. However, even if it is possible, the future of nuclear disarmament will not depend on treaties alone, as treaties can be broken. The two countries with the most comprehensive biological weapons programs in history – the Soviet Union and Iraq – had both nonetheless joined the biological weapons convention. Both weapons programs were only discovered in retrospect, or in the case of Iraq only discovered after years of UN weapons inspections. This example points out an additional problem; the development of highly effective biological or chemical weapons, whose production would be far more difficult to control, could also permanently support an adherence to nuclear deterrence. However, the effectiveness of previous biological and chemical weapons does not yet exceed that of conventional weapons to such a high degree.

It must be taken into account that the stimulus to acquire nuclear weapons will only increase for potentially aggressive actors if the rest of the world scraps their nuclear weapons, due to the advantage that unilateral ownership promises.

Although nuclear installations allow more effective control, a monitoring regime will never be able to offer one hundred percent security that actors are not pursuing secret weapons programs. There is also the possibility that a country will openly evade controls, as in the case of North Korea. It must be taken into account that the stimulus to acquire nuclear weapons will only increase for potentially aggressive actors if the rest of the world scraps their nuclear weapons, due to the advantage that unilateral ownership promises. To guarantee a global zero solution, there would be a permanent need not only for an effective monitoring regime, but also a sanction regime that enforces controls or actually prevents the production of nuclear weapons.

Economic sanctions have mostly proven to be ineffective against determined opponents. Effective opportunities to react to infringements against a global anti-proliferation regime will therefore have to concentrate above all on military means. The recreation of a country's own deterrent through nuclear re-armament would remain an option. As such, however, an armament would also affect the security of third parties, and so would almost inevitably lead to additional tensions and reactions. The

Thus the second option, which would consist of the ability and the readiness to undertake a timely and therefore generally early military intervention, would be all the more important.

dangers of strategic instability to which a premature disarmament of nuclear weapons is likely to lead in this case could slightly exceed the risks of a longer maintenance of nuclear deterrent potential. Thus the second option, which would consist of the ability and the readiness to undertake a timely and therefore generally early military intervention, would be all the more important. If an actor is determined to acquire nuclear weapons in a nuclear-weapon-free world, there would otherwise be no means that would promise reliable protection against their deployment as political or military weapons.

In other words: the aim of comprehensive nuclear disarmament, which should be achieved in the foreseeable future, would have to involve readiness to undertake military preventive strikes against a possible nuclear re-armament. This would not only require a paradigm shift in international law that would have to proscribe efforts to acquire nuclear weapons and give infractions against

the anti-proliferation regime greater weight than the intervention ban. It would also require corresponding military capabilities, which, worldwide, only the USA possesses. With regards to the aversion to war which all modern industrial societies have developed, the question is also raised for western states as to whether their strategic culture still allows the flexibility for a timely reaction in the form of military intervention or their own nuclear re-armament.

These problems show that the aim of comprehensive nuclear disarmament represents a long-term civilizing project. The internal circumstances in individual states would be as important as international agreements in guaranteeing that the ownership of nuclear weapons would no longer be sought or used for aggressive purposes. Without a large degree of trust and reliability between actors, however, it can hardly be realized. The requirements for a similar degree of mutual security must first be created worldwide. Hardly any present conflict scenario is still comprised of simple contrasts of interests alone, but by differences in political structures and strategic cultures. In the foreseeable future, it will therefore require the combination of possible advances in nuclear disarmament with the maintenance of a necessary nuclear deterrent.