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Towards a Stronger Non-proliferation Regime?

The Role of Nuclear Disarmament,
State Interests, and Institutions

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Towards a Stronger Non-proliferation Regime? The Role of Nuclear Disarmament, State Interests, and Institutions

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1. Introduction

It has been more than two years since U.S. President Obama announced his administration's new nuclear policy in his Prague Speech of April 5 2009. The United States would actively pursue the goal of a world without nuclear weapons. A number of important steps towards achieving this objective had to be taken: the reduction of the role of nuclear weapons in the U.S. national security strategy, the conclusion of a new Strategic Arms Reduction Treaty with Russia, the ratification of the Comprehensive Test Ban Treaty and the conclusion of a verifiable Fissile Material Cut-off Treaty. President Obama also called for the reinforcement of the Nuclear Non-Proliferation Treaty by implementing stronger international inspections and adopting a unified response towards defectors. A new framework for civil nuclear cooperation would aim to reduce the risk of proliferation, while efforts had to be increased to secure vulnerable nuclear materials around the world. These non-proliferation measures would have to support the goal of a nuclear-weapons-free-world further. Obama also emphasized that the provision in the NPT that calls upon the nuclear weapon states to strive for nuclear disarmament had to be respected. At the moment, however, progress on Obama's new nuclear agenda seems slow.

In this paper we focus on the connection between nuclear disarmament and non-proliferation that Obama made in his speech. The announcement of steps towards a nuclear-weapons-free-world which the U.S. will pursue is combined with a call for international cooperation to create a stronger non-proliferation regime. The idea that is present is that the goal of nuclear disarmament is necessary to convince non-nuclear weapon states to implement stronger non-proliferation measures. This line of thinking had previously been stated in two remarkable Wall Street Journal op-eds in 2007 and 2008 by George Shultz, Henry Kissinger, William Perry and Sam Nunn. These four respected elderly statesmen, two Republicans and two Democrats, called for the renewal of the vision of a world without nuclear weapons. They pointed out that non-nuclear weapon states became increasingly skeptical of the sincerity of the nuclear powers' commitment to disarmament. They also stressed that the cooperation and trust needed to achieve a world without nuclear weapons could only be obtained if this goal was explicitly stated as an objective and accompanying actions were taken. Obama's Prague speech could thus be interpreted as a way to create international goodwill by announcing the vision and the actions to convince other countries to participate in the common project of a world without nuclear weapons.

The idea of the necessity of nuclear disarmament to strengthen the non-proliferation regime has many supporters. The Wall Street Journal op-eds and Obama's Prague speech were met with enthusiasm by many politicians, non-governmental organizations and academics. A number of uncertainties remain, however. It is after all not exactly clear how the promise of nuclear disarmament is to promote a stronger non-proliferation regime. First of all, one can wonder if stronger non-proliferation measures are indeed blocked because the non-nuclear weapon states demand nuclear disarmament. Second, even if this is the case, it is not immediately obvious how far nuclear disarmament would have to go for them to support stronger measures. Third, even though the U.S. strive for a world without nuclear weapons, the views of the other nuclear powers are also important for progress on nuclear disarmament. For all these reasons, the dialectic project of disarmament and non-proliferation progress to achieve a world without nuclear weapons can be blocked before it even begins. It is possible that the current slow progress on Obama's nuclear agenda is a sign of this. This might be dangerous since it can result in a serious backlash and a new period of proliferation pessimism when stronger measures are indeed needed.

In this paper we look at the challenges for the non-proliferation regime from three theoretical perspectives: idealism, realism and new-institutionalism. This leads us to three research questions. The first is posed from an idealist perspective: How does a lack of nuclear disarmament block progress on stronger measures against the spread of nuclear weapons? As such, we investigate the claim that nuclear disarmament is necessary to convince non-nuclear weapon states to support stronger non-proliferation measures. We do not assume that disarmament alone hinders progress in the field of non-proliferation. From a realist perspective we pose the following question: How do specific state interests interfere with the reinforcement of the non-proliferation regime? New-institutionalism leads us to the last question: How can certain decision procedures hinder the adoption of stronger non-proliferation measures? The non-proliferation regime is very broad, so in this paper the focus lies on the Non-Proliferation Treaty and associated agreements like the IAEA safeguards agreements, and the Fissile Material Cut-off Treaty as a specific non-proliferation measure.

The rest of this paper is structured as follows. Section 2 reviews the literature on the relationship between nuclear disarmament and non-proliferation in general and nuclear disarmament and the non-proliferation regime specifically. Section 3 describes the past and current difficulties in the non-proliferation regime, focusing on the NPT and FMCT. Section 4 analyses the challenges to the regime from the three theoretical perspectives of idealism, realism and new-institutionalism. Section 5 gives a general conclusion of the research and describes possible policy implications.

2. Nuclear Disarmament and Non-Proliferation

Most views on the relationship between nuclear disarmament and non-proliferation can be placed in either the realist or the idealist paradigm in the discipline of International Relations. Here we first discuss the views on this relationship in general, then we look more closely at the relationship between nuclear disarmament and the non-proliferation regime.

Realists consider the improvement of the national security situation of a state to be the most important motive for the acquisition of nuclear weapons (Brown, 2007, p. 10; Deutch, 1992, pp. 124-125; Waltz, 1981). This has two implications for the relationship between nuclear disarmament and the spread of nuclear weapons. It can be argued that there is no connection between these phenomena or that disarmament will cause proliferation because it undermines the security of nuclear powers' allies.

In line with their security objectives states can develop a nuclear capacity to protect themselves from the nuclear weapons of other states. From this perspective the acquisition of nuclear weapons by the Soviet-Union and China can be seen as a reaction to the American nuclear program; The British and French nuclear programs as a reaction to the SU; the Indian program as a reaction to China; and Pakistan's program as a response to India (Sagan, 1996, pp. 57-59). A world without nuclear weapons, however, cannot be achieved by a common disarmament project by the nuclear powers. Realists point out that the current or future conventional military power of adversaries can also drive some states to acquire nuclear weapons (Waltz, 1981). Perceived conventional inferiority compared to traditional opponents could be argued to be the reason for the nuclear programs of China, India and Pakistan, and certainly seems the motive for Israel, North-Korea and Iran to develop nuclear weapons (Brown, 2007, pp. 10-11; Payne, 2005, pp. 145-146).

If the possession of nuclear weapons can be explained as a response to the conventional power of adversaries, it is difficult to see how nuclear disarmament can promote non-proliferation. This seems especially the case if regional conflicts are the cause of insecurity and the position of the U.S. is not of direct importance. This is why realists stress that disarmament and non-proliferation should be thought of as separate phenomena and that U.S. security should not be undermined in the vague hope of halting the spread of nuclear weapons (Colby, 2008). The vision of a world without nuclear weapons will not inspire North-

Korea, India, Israel, Iran and Pakistan to halt their nuclear programs and thus will not entail any progress in the field of non-proliferation (Brown & Deutch, 2007; Rademaker, 2007). This is not to say that proliferation is inevitable. Proliferators can be persuaded to give up nuclear weapons with security guarantees or material benefits and nuclear materials can be secured to prevent their spread (Brown & Deutch, 2007). A strong non-proliferation regime just does not have a connection with disarmament in the realist view.

Another important argument to deny a connection between nuclear disarmament and non-proliferation is that proliferation remained limited during the Cold War, while after the Cold War, when efforts were being made to reduce nuclear weapon arsenals, the world experienced a strong spread of nuclear weapons (May, 2008, p. 21). A possible explanation is that the U.S. and the SU could no longer ensure the security of their allies which led them to develop nuclear weapons (Brown, 2007, pp. 11-12). This line of thinking can also be used to argue that steps towards disarmament will cause proliferation. The American nuclear umbrella is thought of by some as an important instrument to halt the spread of nuclear weapons (Colby, 2008, p. 428; Joseph & Reichart, 1998; Payne, 2005, p. 146). A reduction of the U.S. capacity could therefore lead to a wave of proliferation amongst allies as Germany, Japan and South-Korea. However, exactly at what point the reduction of nuclear weapons would undermine the credibility of the U.S. deterrent is unclear.

Some realists though seem to have different thoughts on the relationship between nuclear disarmament and non-proliferation. Indeed, the remarkable aspect of the earlier mentioned Wall Street Journal op-eds (Shultz, Perry Kissinger & Nunn, 2007, 2008) is that they were written by known realist thinkers. Nunn (2007, p. 6) defends their line of reasoning as follows: *“This [nuclear disarmament] is not because our example will inspire Iran, North Korea or al Qaeda to say “we have seen the light,” but because many more nations will be willing to join us in a firm and vigorous approach to stop the proliferation of nuclear weapons and materials and prevent catastrophic terrorism.”* This view, however, comes close to idealist thinking on the subject, as we will now discuss in more detail.

Idealists argue that it is naïve to think that non-nuclear weapon states will accept the nuclear status of the privileged few indefinitely (Müller, 2008, p. 71). According to them the possession of nuclear weapons by the current nuclear powers has a direct and indirect influence on the spread of these weapons (Ingram, 2008, pp. 3-4; Müller, 2008, p. 72). The possession of a nuclear capacity, for example, directly increases the risk of the spread of dangerous technology. Different indirect mechanisms also increase the risk of proliferation, however. The nuclear weapon states shape the security situation of potential proliferators and even a conventional threat from a nuclear power will always contain an implicit nuclear threat. They also project the use of a nuclear capacity in their doctrines and strategies and turn nuclear weapons into status symbols. In this line of thinking nuclear disarmament can prevent the spread of nuclear weapons by diminishing the influence of the nuclear capacity of some states on others.

Some social-constructivist arguments can also be categorized in the idealist paradigm. The idea that the U.S. nuclear umbrella is necessary to prevent allies from developing nuclear weapons can be countered by the argument that the national identity of states as Germany (Müller, 2003) and Japan (Mochizuki, 2007, pp. 306-308) is shaped in a strong normative and anti-militaristic way, which makes the idea of developing nuclear weapons unthinkable. The dynamic social-constructivist view (Wendt, 2004) implies that other countries can develop a similar national identity. Another argument is connected to the idea of a nuclear taboo (see Tannenwald, 2007). This taboo against the use of nuclear weapons is a powerful norm that can explain why these weapons have never been used since 1945, even though the threat of a nuclear counterattack was not always present. The taboo is associated with an international norm against proliferation, that stops other states from developing a nuclear capacity because the international community would otherwise treat them as pariahs. The anti-proliferation norm can weaken, however, if nuclear powers hold onto to their privileges and equality amongst states is not ensured. In line with this reasoning, nuclear disarmament

can prevent proliferation by cementing a strong non-proliferation norm. States will no longer want to possess nuclear weapons and thus a world without nuclear weapons can be sustained.

On the relationship between nuclear disarmament and the non-proliferation regime, there are some specific realist and idealist views. We will focus here on the core of the non-proliferation regime, the Non-Proliferation Treaty. The treaty essentially rests on three pillars: non-proliferation, nuclear disarmament, and the peaceful use of nuclear energy. Article VI of the treaty contains the disarmament pillar as it calls upon the parties of the treaty “*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...*”. The specific formulation of the article, however, leads to differing interpretations.

Realists argue that article VI of the NPT does not contain an obligation for the de jure nuclear powers to give up their nuclear weapons (Ford, 2007, pp. 401-407; Tertrais, 2010, pp. 125-126). It only calls upon them to pursue negotiations in good faith on the cessation of the nuclear arms race and on nuclear disarmament. These negotiations might not even take place or succeed for that matter. Since all states are called upon to end the nuclear arms race, article VI can even contain obligations for non-nuclear weapon states, namely to prevent new nuclear arms races from arising and thus to fight proliferation by adopting strong measures (Ford, 2007, pp. 407-409).

Idealists on the other hand argue that article VI indeed obliges the nuclear powers to dispose of their privileged weapons (Müller, 2001, pp. 48-50). If this obligation is not fulfilled, non-nuclear weapon states might leave the NPT out of frustration or become less inclined to implement strong non-proliferation measures. The idealist interpretation of article VI is supported by the International Court of Justice (1996) in its advice ‘*Legality of the Threat or Use of Nuclear Weapons*’. In this document the Court stated that the article contains the obligation to achieve a precise end result, namely nuclear disarmament. The view on the connection between the nuclear disarmament obligation and the strengthening of the non-proliferation regime was supported by the High Level Panel on Threats, Challenges and Change (2004, p. 42, paragraphs 118-120) and UN secretary-general Ban Ki-moon (2008) in his Five-Point Proposal to revitalize the international disarmament agenda. Obviously, it has had some success.

With regard to this literature review, the scope of this paper must be clarified. The indirect influence of nuclear weapon states on the desire of others to acquire nuclear weapons or the development of an international norm against the spread of nuclear weapons are not investigated. We focus here on the argument in the idealist tradition that nuclear disarmament is necessary to convince non-nuclear weapon states to adopt stronger non-proliferation measures. Although realist views on the connection between nuclear disarmament and non-proliferation point out the security situation of states and how this influences the will to dispose of or acquire nuclear weapons, we adopt a somewhat different approach and focus on specific state interests that can prevent the implementation of important non-proliferation measures. As said, we will also use a new-institutionalist approach to ascertain whether formal and informal decision procedures hinder the conclusion of agreements.

3. Weaknesses in the Non-Proliferation Regime

In this section we describe the past and current weaknesses in the non-proliferation regime. The focus lies on issues concerning the Non-Proliferation Treaty such as withdrawal from the Treaty, the implementation of the IAEA Model Additional Protocol, the financing of the IAEA, the internationalization of the fuel cycle and NPT enforcement, and on the blocked negotiations on an FMCT.

3.1. The Non-Proliferation Treaty: Loopholes and Weak Spots

A first issue of concern is the possible withdrawal of states from the Non-Proliferation Treaty. The right to withdraw from the treaty is stated in article X.1: *“Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.”* The issue came under attention with the announcement of North Korea in 2003 that it renewed its 1993 notice of withdrawal from the NPT, an action to which the UN Security Council failed to react (Bunn & Rhinelander, 2005). At the 2003 Preparatory Committee for the 2005 NPT Review Conference states-parties were divided about whether to acknowledge North Korea’s withdrawal or to overlook it and to prevent an unproductive debate, the issue was set aside (Kucia, 2003). This practice was continued so the status of North Korea remains unclear (Johnson, 2010, p. 435).

As a reaction to the North Korean actions, many, mostly western governments, want to strengthen the withdrawal provision in the treaty (Spies, 2009). Some suggestions have already been made, for example: the continued liability of a withdrawing state for violations committed while party to the treaty, stricter procedures of withdrawal, and the continuation of safeguards or the return of third party material and equipment in case of withdrawal. The 2005 NPT Review Conference faced the issue of withdrawal but failed to address it meaningfully (Crail & McMonigle, 2005, pp. 2-3; Johnson, 2005). The challenge was taken up again at the 2010 review conference, but it was clear from the final document of this conference that no consensus was reached on the issue (see Conference of the Parties, 2010). Apparently many non-nuclear weapon states fear that the sovereign right of states to withdraw from the treaty will be constrained (Singelee & Johnson, 2010). Therefore, an important loophole in the treaty remains, as states can acquire nuclear technology for the peaceful use of nuclear energy under the NPT, but can later choose to withdraw from the treaty and use this technology to produce nuclear weapons.

Another issue facing the non-proliferation regime is the implementation of the IAEA safeguards agreements negotiated with non-nuclear weapon states party to the NPT. The standard agreement is INFCIRC/153 (Corr.), which obliges states to declare all nuclear materials and facilities subject to the agreement as well as changes herein to the IAEA (IAEA, n.d., p.2). The Agency then checks the accuracy of the declared quantities of nuclear material. After the discovery of Iraq’s clandestine nuclear weapons program in 1991, the IAEA sought to strengthen the safeguards system (Spies, 2009). A Model Additional Protocol to the standard safeguards agreement, INFCIRC/540, was agreed upon in 1997. This protocol requires states for example to disclose broader information related to the fuel cycle and to allow short-notice inspection of nuclear sites and the collection of environmental samples beyond declared locations (IAEA, n.d., p.3).

Not all non-nuclear weapon states have concluded the comprehensive safeguards agreement with the IAEA and less have implemented the Model Additional Protocol (IAEA, 2011). To strengthen the non-proliferation regime, some states want to make the Additional Protocol the international standard and even a condition for nuclear supply, but many developing countries find this unacceptable and stress that the protocol should remain voluntary (Spies, 2009). The stalemate continues on this matter as the NPT 2010 review conference final document could not adopt strong language on the matter (see Conference of the Parties, 2010). This means that an important non-proliferation instrument, although widely applied, does not have a mandatory status, which is worrying, especially since the Protocol might not even contain sufficiently strong measures (du Preez, 2005; Simpson, 2004, p. 10). To improve the safeguards system, however, it is not only necessary to widen the competences of the IAEA, but also to increase the resources at the Agency’s disposal so that it can effectively fulfill its tasks. This proves to be a problem.

The IAEA is financed with regular contributions of the member-states based on a UN formula and voluntary contributions from members (Kerr, 2007) or non-governmental organizations (Redden, 2003, p. 37). Safeguards are mostly funded by the regular budget, and technical support and cooperation, the other main task of the Agency, is mostly funded with voluntary contributions (Stoiber, 2003, p. 133). In 1985 the IAEA was imposed a zero real growth budget as part of efforts to install greater fiscal discipline at the UN and other affiliated organizations (Redden, 2003, pp. 36-39). These budgetary constraints have had a negative impact on the working of the IAEA. In addition, new tasks, such as the implementation of the Model Additional Protocol, have further increased the work load of the Agency. To finance its tasks, the IAEA has come to rely more on voluntary contributions, but these are uncertain.

Since 2003 the IAEA has received modest budget increases (Kerr, 2007). The Agency's former Director-General, Mohamed ElBaradei, and more recently the Obama-administration have sought an improvement of the IAEA budget, but other major funders, like Canada and most western European countries seem to favor a continuation of the zero real growth policy (Crail, 2009). However, the United States have increased their own voluntary contributions to the budget (Horner, 2011b). For developing countries, technical support from the IAEA is more important than safeguard activities (Stoiber, 2003, p. 133). As they often insist that a balance is maintained between these tasks (Redden, 2003, p. 41), this can imply that an agreement to improve the Agency's financing to strengthen the non-proliferation regime will also have to contain increased efforts in the field of nuclear cooperation with developing countries. This, of course, will further increase costs. Since it is obvious that not only stronger non-proliferation rules but also more resources are needed to halt the spread of nuclear weapons, the relatively low IAEA budget is a weak spot in the current regime.

However, the most important loophole in the Non-Proliferation Treaty is arguably the right to the peaceful use of nuclear energy, enshrined in article IV. Non-nuclear states are allowed to reprocess plutonium or to enrich uranium for civil nuclear use, but this means that if states choose to do so, they can possibly develop a nuclear weapons capacity from their peaceful facilities. A possible solution to this loophole is the internationalization of the fuel cycle by placing it under the control of a coalition of states or an international organization (Perkovich & Acton, 2009, p. 90).

The internationalization of the fuel cycle has come under attention in recent years with concerns over Iran's uranium-enrichment program and the fear that the spread of fuel-cycle technology will also lead to the spread of nuclear weapons (Pomper, 2009). The idea of international control has been defended by Mohamed ElBaradei (2003) and supported by the United Nations Security Council (2009) in resolution 1887 and by the final document of the 2010 NPT review conference (Conference of the Parties, 2010). Some plans are already being advanced by different actors, but it remains a contentious issue.

A first important initiative is the Russian development of a uranium enrichment center and low enriched uranium fuel bank in Angarsk (Pomper, 2009). The idea is that IAEA members can draw on the reserve when supply is disrupted because of political reasons. The IAEA Board has endorsed the plan, but not with a consensus as important developing countries refused to support it (Horner, 2010). A second proposal was made in 2006 by the Nuclear Threat Initiative that was willing to finance the IAEA, together with member states, to develop a low enriched uranium fuel reserve (Horner, 2011a). The IAEA Board finally agreed with consensus to establish the fuel bank in December 2010. The aim of the proposals is to dissuade countries from developing their own uranium enrichment facilities by ensuring the supply of fuel at market prices (Horner & Meier, 2009). The reason that these plans are contested, however, is that many developing countries fear that they will have to give up their right to the fuel cycle even though efforts have been made to mitigate these fears (Horner, 2011a; Horner & Meier, 2009; Pomper, 2009).

A final issue under attention here is the enforcement of the Non-Proliferation Treaty. As the Iranian and North-Korean cases demonstrate, enforcing compliance with the treaty has

proved to be a challenge. Problems can be situated at the level of the IAEA and at the level of the UN Security Council.

Reports of non-compliance at the level of the IAEA could be more strict (Goldschmidt, 2009a). If a state is found to be in noncompliance with its safeguards agreement, the IAEA Board of Governors has to report this to all members and the UN General Assembly and Security Council. However, the decisions of the Board seem inconsistent as sometimes failure to comply with the agreement is downplayed for political motives. For example, the Board seemed to have difficulties with placing the Republic of Korea and Egypt in the same category as Iran. It can be argued, however, that a uniform procedure should be adopted for all forms of non-compliance.

The lack of a unified response towards potential proliferators is most obvious at the level of the UN Security Council. One of the five permanent members can always use its veto to oppose sanctions against proliferators because of economic or geopolitical reasons (Goldschmidt, 2009b, p. 15). China and Russia can be specifically mentioned here. China has been criticized for its soft approach towards North-Korea, which can be explained by Chinese fears of instability and strategic uncertainty in the case of North-Korean regime collapse (International Crisis Group, 2009, pp. 17-20). In the Iranian case, China seems to take Iran's value in meeting its domestic energy demands into account as well as other geopolitical interests (International Crisis Group, 2010). Russia too has been permissive regarding Iran because of economic and geopolitical interests (Orlov & Vinnikov, 2005, pp. 56-57) and current developments can be subject to the evolution of Russian-American strategic relations (Sadjadpour, 2011). There is much discussion about how to handle the Iranian and North-Korean cases, but cooperation between the permanent members of the UNSC is clearly lacking. By not being able to generate a strong response towards defectors, the non-proliferation regime is put under strain. Potential proliferators can always decide to take their chances given that punishment remains uncertain.

3.2. The Fissile Material Cut-Off Treaty: 18 Years of Obstruction

A Fissile Material Cut-Off Treaty is meant to halt the production of fissile materials for the use in nuclear weapon programs (Berkhout, Bukharin, Feiveson & Miller, 2005, pp. 167-169; Bragin, Carlson & Hill, 1998, p. 97). A universal treaty could advance the goals of both nuclear disarmament and non-proliferation. The cut-off can limit the nuclear weapon arsenals of the de jure and de facto nuclear powers and make them subject to IAEA inspections. A higher control over fissile materials can also prevent diversion of these materials by terrorist organizations or other states. Since the 1993 United Nations General Assembly (1993) resolution calling for negotiations on an FMCT proceedings on the issue in the Conference of Disarmament have been obstructed. Therefore, an important non-proliferation measure is yet to be negotiated.

The failure to start negotiations on an FMCT can be explained by the use of a tactic which is often called linkage (Goldblat, 2000, p. 105; Rissanen, 2006; UNIDIR, 2009, p. 12). This entails that some states want to couple progress on different issues, which others resist. Consequently, a work program for the Conference of Disarmament to start negotiations on an FMCT cannot be adopted. The four core issues of the Conference are: nuclear disarmament, an FMCT, the Prevention of an Arms Race in Outer Space (PAROS) and legally binding negative security guarantees (Reaching Critical Will, 2010, pp. 7-11). Factors directly related to an FMCT, such as the treatment of existing stocks of fissile materials and the verification of the treaty, have also blocked the start of negotiations (Meyer, 2009a; Rissanen, 2006).

After the adoption of an FMCT negotiating mandate by the Conference on Disarmament in 1995 (Conference of Disarmament, 1995), an agreement for a work program could not be reached until 1998 (Boese, 1998; Rissanen, 2006). Disagreement between members of the Non-Aligned Movement (NAM) and the recognized nuclear powers on the issue of a

timebound framework for nuclear disarmament, and arguing about whether or not the treaty should include measures on existing stocks of fissile material, an issue especially relevant for Pakistan, were the causes of this obstruction. After the nuclear tests by India and Pakistan in 1998 a short break-through was made and a work program was adopted (UNIDIR, 2011, pp. 5-6). There was, however, not much time left for negotiations before the closing of the Conference that year. Another program had to be adopted the following year, but this would not happen until 2009.

After 1998 other issues were linked with negotiations on an FMCT. The US announcement of plans to develop a missile defense system in 1999 urged China to press for negotiations on PAROS and the review of the American nuclear strategy led members of the NAM to demand legally binding negative security guarantees (Rissanen, 2006). In 2004 the US decided to no longer pursue a verifiable FMCT, further complicating matters by stepping away from the 1995 negotiating mandate. Mostly due to a continuing stalemate caused by disagreement on linkage, the Conference on Disarmament remained blocked until 2009 (Rissanen, 2006; UNIDIR, 2011, pp. 6-9).

In 2009 the Conference on Disarmament was able to adopt a work program (Meyer, 2009b). This success can be explained by the decision of the Obama-administration to again pursue a verifiable treaty, the substantial inclusion of all four core issues in the work program and the improved atmosphere due to president Obama's Prague speech. However, procedural objections by China and Pakistan obstructed the actual start of negotiations. Agreement on a work program remained blocked in 2010 and 2011 mostly due to objections by Pakistan that insists on the inclusion of existing stocks of fissile materials in FMCT negotiations (Crail, 2011). For the moment, progress at the Conference on Disarmament seems far off.

4. Reinforcing the Non-Proliferation Regime: Idealism, Realism, and New-Institutionalism

Section 3 reviewed past and current weaknesses in the non-proliferation regime. These weaknesses will now be analyzed from an idealist, a realist and a new-institutionalist perspective. First we ask how a lack of nuclear disarmament progress blocks the implementation of stronger measures and how further disarmament measures can advance the non-proliferation goal. Second, we analyze how state interests pose a challenge to the reinforcement of the non-proliferation regime. Finally, we investigate whether and how formal and informal decision procedures hinder the adoption of stronger measures against the spread of nuclear weapons.

4.1. The Idealist Perspective: Nuclear Disarmament to Strengthen Non-Proliferation

Nuclear disarmament has always been a contentious issue in the non-proliferation regime. Discussions on the implementation of Article VI of the NPT and on the adoption of a Comprehensive Test Ban Treaty (CTBT) and negative security guarantees were already prevalent at the review conferences of 1975, 1980, 1985 and 1990 (Dhanapala, 2005, pp. 17-21; Ogilvie-White & Simpson, 2003, p. 41; Stoiber, 2003, p. 126). These measures were mostly demanded by the developing countries of the Non-Aligned Movement while the nuclear powers objected to them. The decision to indefinitely extend the Non-Proliferation Treaty at the 1995 review and extension conference, mainly advocated by the nuclear powers and their allies, was dependent on the adoption of a politically binding action program on nuclear disarmament (Dhanapala, 2005, p. 57; Rauf & Johnson, 1995 pp. 34-35). Many developing countries wanted to accomplish more than just the indefinite extension and at first saw the extension of the treaty with only 25 years as a way to keep open the possibility of pressuring the nuclear powers for further nuclear disarmament measures (Dhanapala, 2005, pp. 34-37). Alternatively, it could also be argued that many countries supported the decision because they saw this to be in their own security interests (Rauf & Johnson, 1995, pp. 32-

33). The successful conclusion of the 2000 review conference can be related to the commitment of the nuclear powers to the unequivocal undertaking to eliminate their nuclear arsenals and to the rest of what was later called the 13 step program (Johnson, 2000; Ogilvie-White & Simpson, 2003, p. 43). However, it seems as though it was only with the 2005 review conference that nuclear disarmament and non-proliferation were directly opposed. The North-Korean and Iranian cases, as well as the renewed fear for nuclear terrorism brought the need for stronger non-proliferation measures to the agenda, but at the same time the U.S. turned away from nuclear disarmament commitments (Johnson, 2005). As this seemed impossible to reconcile, the conference turned out to be a failure.

Reflecting upon the 2005 review conference, Obama's decision to strive for nuclear disarmament can indeed help gather support for the reinforcement of the non-proliferation regime. Yet even though the results of the 2010 NPT review conference were met by many with enthusiasm, no stronger non-proliferation measures were decided upon. Nuclear disarmament commitments can however be directly related to non-proliferation measures as the strengthening of the treaty withdrawal provision and the universal implementation of the Model Additional Protocol. Indeed, western states initially hoped that the U.S. disarmament initiatives would help achieve these goals, but the issues remain blocked (Potter, Lewis, Mukhatzhanova & Pomper, 2010, p. 3, pp. 14-16). The right to withdraw from the treaty can be considered as leverage as non-nuclear weapon states can threaten to use this right to pressure the nuclear powers to commit to nuclear disarmament (Dhanapala, 2005, p. 37). Consequently, not enough support can be raised to strengthen the provision, but this might happen if nuclear disarmament commitments were made sufficiently credible. The same applies to the implementation of the Additional Protocol. Some key nonaligned states have already linked progress on standardization of the Protocol to nuclear disarmament progress (du Preez, 2006). Nuclear disarmament measures might therefore convince non-nuclear weapon states to increase their non-proliferation efforts and adopt the Protocol. The question that remains is: how much 'nuclear disarmament' is enough?

Clearly, U.S. President Obama has not yet been able to accomplish all the first steps towards a world without nuclear weapons proposed in his Prague speech. Although START III, the treaty on bilateral American-Russian nuclear weapons reductions, was concluded (U.S. Department of State, 2010), one can wonder if the agreed reductions will be considered sufficient by non-nuclear weapon states. The reduction of the role of nuclear weapons in the U.S. national security strategy was also achieved. The Nuclear Posture Review Report (U.S. Department of Defense, 2010, pp. 15-16) shows, however, that the U.S. do not adopt a 'no first use' policy, while the position on legally binding negative security guarantees remains unclear. These decisions could still be criticized. U.S. Ratification of the Comprehensive Test Ban Treaty remains uncertain because of a required 2/3 majority and Republican protest (Kalionzes & McGrath, 2010). Yet even if the U.S. were to ratify the treaty, the CTBT is not likely to come into force any time soon. For this to happen, all 44 annex 2-states need to ratify the treaty (Comprehensive Test Ban Treaty, 1996). Of these states, China, Egypt, Indonesia, Iran, Israel and the U.S. have signed but not ratified the treaty, while India, Pakistan and North-Korea still need to sign the treaty (Comprehensive Test Ban Treaty Organization, 2011). U.S. ratification can lead other countries to follow suit, but approval by North-Korea remains uncertain (Horovitz & Golan-Vilella, 2010). As such, an important demand of many non-nuclear weapon states cannot be met. From the debates at the 2010 NPT review conference, it also became clear that further measures such as the start of negotiations on a timeframe for the abolition of nuclear weapons were blocked by the nuclear powers (Potter et al., 2010, pp. 7-11). Clearly, there is still a discrepancy between the demands of non-nuclear weapon states and what the nuclear powers are prepared to commit to. In addition, the options for the U.S. to pursue progress on nuclear disarmament alone are limited. Indeed, the actions of the other nuclear weapon states are also of importance.

Finally, the conclusion of an FMCT was considered as one of the first steps towards a nuclear-weapons-free-world. The issue of nuclear disarmament plays a role in advancing

these as it is one of the four core issues of the Conference on Disarmament. Because of linkage, progress on nuclear disarmament, together with the related issue of legally binding negative security guarantees and the issue of PAROS, are important for the conclusion of an FMCT. The work program for the 2009 conference contained all four issues (Conference on Disarmament, 2009). However, other factors prevented its implementation. These will be discussed in the next part. What remains unclear here is to what degree progress on nuclear disarmament and legally binding negative security guarantees will be necessary for the conclusion of an FMCT once negotiations have started. The 2009 work program leaves open the possibility of a nuclear disarmament treaty and internationally legally binding negative security guarantees. If these measures will be strongly pursued by non-nuclear weapon states, negotiations on an FMCT can still be obstructed, as it is for the foreseeable future questionable that the nuclear powers will agree to this.

In conclusion, it seems that progress on nuclear disarmament can advance the goal of non-proliferation. The strengthening of the withdrawal provision of the NPT, the universal implementation of the Model Additional Protocol and negotiations on a FMCT are related to progress on nuclear disarmament. Further disarmament efforts could thus lead non-nuclear weapon states to support stronger non-proliferation measures. It is, however, not clear how much progress on disarmament would have to be achieved for non-nuclear weapon states to do this. Neither is it clear how far the nuclear weapon states -since the U.S. cannot remain alone in this- are willing or able to go. Yet nuclear disarmament progress is not the only challenge to the reinforcement of the non-proliferation regime. In the next parts state interests and inefficient decision procedures are taken into account.

4.2. The Realist Perspective: State Interests obstructing Non-Proliferation

Differing state interests can block the implementation of stronger measures against the spread of nuclear weapons. These are most obvious when it comes to the funding of the IAEA, the internationalization of the fuel cycle, the enforcement of the NPT, and the negotiations on an FMCT.

As discussed in section 3, the low funding of the IAEA forms a weakness in the non-proliferation regime. Even though the U.S. strive to increase the Agency's budget, other important contributors, like Canada and many western European countries show reluctance towards this goal (Crail, 2009). These countries obviously have other financial priorities. Developing countries stress the need for assistance in the field of peaceful nuclear energy and prefer spending on that IAEA task (Redden, 2003, p. 41; Stoiber, 2003, p. 133). As such, the reinforcement of the non-proliferation regime by increasing the resources at the Agency's disposal does not seem to have a lot of supporters. Interestingly, many western states support the idea of making the Model Additional Protocol a condition for nuclear supply (Spies, 2009) -the implementation of which would increase costs for other, mostly developing countries- while they themselves seem to refuse extra costs to support the IAEA in its non-proliferation tasks.

When it comes to the internationalization of the fuel cycle, here too the financial implications of proposals can cause reluctance by some countries to support them (Horner & Meier, 2009). The most visible point of contention, however, concerns the right to the peaceful use of nuclear energy. The Bush administration proposed a fuel cycle arrangement in which recipients had to renounce enrichment and spent fuel reprocessing, leading to protest by many developing countries (Horner & Meier, 2009). Current plans do not include this condition, but concerns remain (Horner, 2011a). For many developing countries the issue connects to matters of trust, credibility and sovereign equality, which can lead them to perceive the internationalization of the fuel cycle as not in their interest. However, fuel supply assurances alone can be regarded as insufficient (Yudin, 2011, p. 3). Additional measures can include placing new and eventually all enrichment and reprocessing activities under multilateral control. Cooperation by all states will be necessary to accomplish these steps,

but as sovereign control over current national facilities would have to be given up, this can prove to be difficult.

State interests form the obvious obstacle to a stronger enforcement of the NPT. Important in this regard is that challenges are most visibly posed by the nuclear weapon states, more specifically the P5 members of the UN Security Council, and not the non-nuclear weapon states. Standard responses to future non-compliance or NPT withdrawal agreed upon by the Security Council could be an improvement of the non-proliferation regime (Goldschmidt, 2009b, pp. 17-18). Since national interests are the reason for current ineffective treaty enforcement, it is however unlikely that such measures can be agreed upon. The beneficial role of nuclear disarmament in this regard is uncertain.

Though progress on nuclear disarmament plays a role in the blocked negotiations on an FMCT, the conclusion of the treaty is also obstructed by specific state security concerns. The positions of China and Pakistan can be highlighted here.

China stresses linkage of the dossier of the Prevention of an Arms Race in Outer Space (PAROS) with negotiations on an FMCT (Reaching Critical Will, 2010, pp. 8-9). Since the U.S. for a long time refused this, proceedings in the Conference on Disarmament remained blocked. The adoption of PAROS in work programs in 2007 and 2009 and the subsequent obstruction of China, however, raises suspicion that the country simply wants to prevent negotiations on an FMCT (Boese, 2007; Meyer, 2009b). Indeed, the treaty could pose a threat to Chinese security interests.

France, Russia, the United Kingdom and the United States already pledged during the 1990s to halt the production of fissile materials for nuclear weapons (Crail, 2011). China is assumed to have halted production, but refuses to declare a moratorium (Meyer, 2009b; Zhang, 2011, pp. 68-69). Of the three de facto nuclear powers only India and Pakistan are believed to continue with production (Crail, 2011). The refusal of China to officially halt production can indicate the country's position on an FMCT. There are after all strategic reasons for China's reluctance (Meyer 2009b). A first reason is directly related to PAROS as the development of an American missile defense system could undermine the credibility of the relatively limited Chinese nuclear deterrent. Another reason is concerns about future actions by India. As such, China can feel the need to hold on to the possible production of fissile material for nuclear weapons out of fear to end up in an inferior position. Recent research indicates that China has the smallest stock of fissile material amongst the de jure nuclear weapon states, which can indeed make the country hesitant to join an FMCT (Zhang, 2011).

For Pakistan, including agreements on existing stocks of fissile material in the FMCT negotiations is of crucial importance, but the five de jure nuclear powers and India only want to deal with future production (Crail, 2011; Meyer, 2009a). The reason for Pakistan to stress the issue of stocks is the need for strategic parity with India, which is believed to possess more fissile material (Mian & Nayyar, 2010). To emphasize the matter, Pakistan refers to a *Fissile Material Treaty* rather than a *Fissile Material Cut-off Treaty*. Concerns were aggravated by the U.S.-India nuclear deal, which allows India to import uranium for civil nuclear reactors under safeguards, possibly freeing up domestic uranium for the production of nuclear weapons. As civil nuclear cooperation with a state outside of the NPT is introduced, the agreement is also regarded as a weakening of the non-proliferation regime (Dhanapala & Kimball, 2008).

State interests leading to other financial priorities or economic and security concerns form challenges to the implementation of stronger measures against the spread of nuclear weapons. Increased IAEA funding, the internationalization of the fuel cycle, stronger NPT enforcement and the adoption of an FMCT are all blocked because of reasons other than a lack of nuclear disarmament progress. The analysis from a realist perspective thus shows that disarmament can only go so far and that compromises concerning state interests will also be necessary for a strong non-proliferation regime.

4.3. The New-Institutionalist Perspective: Decision Procedures Blocking Agreements

New-institutionalism stresses the autonomous role of political institutions (March & Olson, 1984, pp. 738-740). As such, they have an influence of their own on decision making. Here, we investigate whether formal and informal decision procedures can prevent agreements on stronger non-proliferation measures. The focus lies on decision making at the NPT review conferences and at the Conference on Disarmament.

A first problem concerns the group system used at NPT review conferences. The NPT member states are organized in traditional groups (Rauf, 1998, p. 127), that are remnants of the Cold War period (Johnson, 1995). The western group consists of members that associate themselves with the West, the eastern group is constituted of former members of the Eastern Bloc. Countries that wanted to hold on to an independent position have organized themselves as the Non-Aligned Movement (NAM), and China forms a Group of One. During the Cold War this traditional group system could enhance communication and decision making, but it no longer reflects the current international political context (Johnson, 1995; Rauf, 1998, pp. 127-128). Consultations at group level can give states the power to block issues even before they are discussed in plenary and can hinder the discovery of agreement between members of different groups (Müller, 2005, pp. 4-5).

The traditional group system is mostly an informal rule at the NPT review conference. If important internal differences exist between members, the perceived need for group cohesion can lead to lowest common denominator positions. Traditional partnerships can thus prevent the forming of new coalitions that can generate support for stronger non-proliferation measures. The forming of specific interest groups can sometimes lead to better results as is shown by the accomplishments of the New Agenda Coalition at the 2000 NPT review conference (Johnson, 2000). Formulas like the Friends of the Chair at the 1995 conference (Rauf, 2000, p. 157) or the Focus Group in 2010 (Potter et al., 2010, p. 6) can facilitate consensus building, but the forming of these groups is uncertain.

A second issue is the consensus rule used at review conferences. Because the rule of consensus also applies to procedural decisions, the review process can easily be blocked (Müller, 2005, p. 4). At the 2005 NPT review conference this led to obvious problems as disagreements between Egypt, Iran and the United States led to considerable delays and the failure to adopt a meaningful final document (Johnson, 2005; Müller, 2005). In 2010, the conference could have been blocked by Iran as some feared, but the country was not prepared to do so (Potter et al., 2010, p. 5). Consensus requirements on procedural issues can block decision making and can thus be thought of as unnecessary, but the rule could also be weakened for substantive issues (Rauf, 2000, p. 156). Issues such as the standardization of the Additional Protocol or stricter withdrawal from the treaty for example might better be agreed upon with a majority of the member states.

Further problems can be posed by the inadequate institutional infrastructure of the NPT. In contrast to other UN multilateral agreements and collective security partnerships, the NPT does not have a permanent secretariat (Choubey, 2009, p. 11; Dhanapala, 2005, p. 61). Since the treaty lacks an executive organ, coordinated reactions to developments concerning the treaty, for example non-compliance, cannot be taken. Some member states, particularly Canada, have pleaded for a stronger institutional base for the treaty (Dhanapala, 2005, pp. 131-132; Potter et al., 2010, pp. 17-18), but others are worried about the financial implications or argue that the current situation is adequate and that it is the working of the UN Security Council that needs improvement to sanction non-compliance with the treaty (Howlett & Simpson, 2005, p. 20). Although not specifically investigated here, decision making procedures at the level of the Security Council are obviously of importance as well.

At the Conference on Disarmament the traditional group system and a strict consensus rule are used as well. The three traditional groupings are present with a more limited membership while China forms a Group of One (Reaching Critical Will, 2010, p. 2). The group system will probably encounter the same problems as at the NPT review conferences. Some member

states of the Conference have already voiced the criticism that the dynamic within traditional groups hinders reaching a consensus instead of facilitating it (UNIDIR, 2009, p. 16).

The rules of procedure of the Conference on Disarmament state that every decision is to be taken by consensus (Conference on Disarmament, 2003, p. 3, paragraph 18). This applies to substantive as well as procedural matters, so that participants can easily block decisions on any matter (Goldblat, 2000, p. 106). Membership of the Conference has also increased, leading to more potential vetoes. Together with the requirement that a new work program has to be adopted each year (Conference on Disarmament, 2003, p. 4, paragraph 28), leading to the expiration of previously agreed upon programs as in 1998 (UNIDIR, 2011, p. 6), proceedings in the Conference on Disarmament can easily be obstructed.

The Conference's deadlock had led to discussions on whether or not negotiations on an FMCT should be brought out of the Conference (Crail, 2011). Important in this regard is that current obstruction is caused by Pakistan that uses the rules of procedure to demand the inclusion of the issue of existing stocks in FMCT negotiations. Since the country would be an important party to an eventual FMCT, it is obvious that the issue will have to be addressed if Pakistan is to join the treaty. As such, bringing the matter outside of the Conference on Disarmament to avoid Pakistan's veto can prove to be ineffective in achieving progress.

Rules of procedures in the non-proliferation regime do not necessarily prevent stronger measures against the spread of nuclear weapons. The traditional group system can, however, make it difficult to build consensus on further measures. Strict unanimity rules can be used by member states to directly block progress. Weaker consensus requirements can advance matters, but it will obviously be hard to find agreement on this. It can also lead to questioning on the appropriate decision making forum. Of course, the consensus rule is used to defend own interests and viewpoints, meaning that progress on stronger non-proliferation measures can also simply require compromises on these issues, certainly when it comes to key participants.

5. Conclusion

In this paper we have investigated the challenges to the reinforcement of the non-proliferation regime from three theoretical perspectives: Idealism, Realism and New-Institutionalism. The view that nuclear disarmament is needed to convince non-nuclear weapon states to support stronger non-proliferation measures was analyzed. Besides this we also examined how state interests and decision procedures can interfere with the reinforcement of the non-proliferation regime. The analysis shows that you can identify different obstacles to stronger measures against the spread of nuclear weapons. To reinforce the non-proliferation regime, all these factors will have to be taken into account.

A lack of progress in the field of nuclear disarmament can prevent measures such as a stricter withdrawal from the Non-Proliferation Treaty, the standardization of the Model Additional Protocol, and the conclusion of a Fissile Material Cut-Off Treaty. This means that a policy combining increased non-proliferation efforts and nuclear disarmament commitments can create opportunities. It is, however, unclear how far disarmament has to go for non-nuclear weapon states in order for them to support stronger measures. As was clear from the 2010 NPT review conference, differences on the subject remain between them and the nuclear powers. Specific state interests can form obstacles to increased IAEA funding, the internationalization of the fuel cycle, the enforcement of the NPT, and negotiations on an FMCT. Different financial priorities block a raise in the Agency's budget and can create reluctance on the issue of fuel cycle internationalization. This last measure is also contentious because many developing countries relate it to matters of sovereign equality. Enforcement of the NPT is clearly subject to economic and geopolitical interests. Important state security concerns also block negotiations on an FMCT. Chinese worries about possible future strategic inferiority and Pakistan's perceived need to balance India can bring these countries to prevent the treaty. An FMCT will be almost impossible to bring into force when

these matters are not addressed. Decision procedures can also hinder the reinforcement of the non-proliferation regime. The traditional group system used at the NPT review conferences and at the Conference on Disarmament can prevent the development of new coalitions to press for stronger measures and the consensus rule can easily be used to block proceedings.

If policy makers want to implement stronger measures against the spread of nuclear weapons, the different challenges to the non-proliferation regime will have to be overcome. Nuclear disarmament commitments can create international goodwill, but besides this, compromises will have to be made to account for diverging state interests. In addition, new institutional arrangements to facilitate decision making on stronger non-proliferation measures can be explored. This implies that expectations on the impact of nuclear disarmament progress alone should be dampened. A helpful approach could be a combination of efforts to address the different challenges to the reinforcement of the non-proliferation regime. More work could be done then on state interests and institutional matters, preferably before the window of opportunities created by president Obama's new nuclear agenda closes and a new period of proliferation pessimism steps in.

6. References

- Ban, K. (2008). *The United Nations and security in a nuclear-weapon-free world*. Consulted on March 29 2010 via http://www.un.org/apps/news/infocus/sgspeeches/search_full.asp?statID=351
- Berkhout, F., Bukharin, O., Feiveson, H. & Miller, M. (1995). A cutoff in the production of fissile material. *International Security*, 19 (3), 167-202.
- Boese, W. (1998). CD convenes committee to work on fissile cutoff [electronic version]. *Arms Control Today*, 28 (August/September).
- Boese, W. (2007). Negotiations elude disarmament body again [electronic version]. *Arms Control Today*, 37 (October).
- Bragin, V., Carlson, J. & Hill J. (1998). Verifying a fissile material production cut-off treaty. *The Nonproliferation Review*, 6 (1), 97-107.
- Brown, H. (2007). New nuclear realities. *The Washington Quarterly*, 31 (1), 7-22.
- Brown, H. & Deutch, J. (2007, November 19th). The nuclear disarmament fantasy. *The Wall Street Journal*, p. A19. Consulted on March 27 via http://www.wagingpeace.org/articles/2007/11/26_brown_article_responses.php
- Bunn, G. & Rhinelander, J.B. (2005). NPT withdrawal: Time for the Security Council to step in [electronic version]. *Arms Control Today*, 35 (May).
- Choubey, D. (2009). *Restoring the NPT: Essential steps for 2010*. Carnegie Endowment for International Peace. Consulted on April 10 2010 via http://www.carnegieendowment.org/files/restoring_the_npt.pdf
- Colby, E. (2008). Nuclear abolition: A dangerous illusion. *Orbis*, 52 (3), 424- 433.
- Comprehensive Test Ban Treaty (1996). Consulted on December 15 2011 via http://www.ctbto.org/fileadmin/content/treaty/treaty_text.pdf
- Comprehensive Test Ban Treaty Organization (2011). Status of signature and ratification. Consulted on December 15 2011 via <http://www.ctbto.org/the-treaty/status-of-signature-and-ratification/>
- Conference of the Parties, 2010. NPT/CONF.2010/L.2.
- Conference on Disarmament (1995). CD/1299.
- Conference on Disarmament (2009). CD/1864.
- Conference on Disarmament (2003). *Rules of procedure of the Conference on Disarmament*. CD/8/Rev.9.
- Crail, P. (2009). IAEA budget gets modest boost [electronic version]. *Arms Control Today*, 39 (September).
- Crail, P. (2011). P5 to take up fissile material cut-off [electronic version]. *Arms Control Today*, 41 (September).
- Crail, P. & McMonigle, J. (2005). *Stalemate in the diplomatic trenches: An overview of the diverging positions at the 2005 NPT review conference*. Center for Nonproliferation Studies. Consulted on April 9 2010 via <http://cns.miis.edu/stories/pdfs/050516.pdf>
- Deutch, J.M. (1992). The new nuclear threat. *Foreign Affairs*, 71 (4), 120-134.
- Dhanapala, J. (2005). *Multilateral diplomacy and the NPT: An insider's account*. United Nations Publication (UNIDIR). Consulted on April 3 2010 via <http://www.unidir.org/pdf/ouvrages/pdf-1-92-9045-170-X-en.pdf>

- Dhanapala, J. & Kimball, D. (2008). *A Nonproliferation Disaster*. Consulted on April 29 2010 via http://www.carnegieendowment.org/publications/index.cfm?fa=view&id=20292&zoom_highlight=dhanapala+kimball
- Du Preez, J. (2005). The 2005 NPT review conference: Can it meet the nuclear challenge? [electronic version] *Arms Control Today*, 35 (April).
- Du Preez, J. (2006). Half full or half empty? Realizing the promise of the nuclear nonproliferation treaty [electronic version]. *Arms Control Today*, 36 (December).
- ElBaradei, M. (2003, October 16th). Towards a safer world. *The Economist*. Consulted on April 14 2010 via <http://www.iaea.org/NewsCenter/Statements/2003/ebTE20031016.html>
- Ford, C.A. (2007). Debating disarmament: Interpreting article VI of the treaty on the non-proliferation of nuclear weapons. *The Nonproliferation Review*, 14 (3), 401-428.
- Goldblat, J. (2000). The Conference on Disarmament at the crossroads: To revitalize or dissolve? *The Nonproliferation Review*, 7 (2), 104-107.
- Goldschmidt, P. (2009a). Exposing nuclear non-compliance. *Survival*, 51 (1), 143-164.
- Goldschmidt, P. (2009b). *Concrete steps to improve the nonproliferation regime*. Carnegie Endowment for International Peace. Consulted on April 16 2011 via http://carnegieendowment.org/files/improve_nonpro_regime.pdf
- High Level Panel on Threats, Challenges and Change (2004). *A more secure world: Our shared responsibility*. Consulted on March 29 2010 via <http://www.un.org/secureworld/report2.pdf>
- Horner, D. (2010). Countries aim for fuel bank Endorsement [electronic version]. *Arms Control Today*, 40 (November).
- Horner, D. (2011a). IAEA Board approves fuel bank plan [electronic version]. *Arms Control Today*, 41 (January/February).
- Horner, D. (2011b). Administration budget request for IAEA rises [electronic version] . *Arms Control Today*, 41 (April).
- Horner, D. & Meier, O. (2009). Talks on fuel bank stalled at IAEA [electronic version]. *Arms Control Today*, 39 (October).
- Horowitz, L. & Golan-Vilella, R. (2010). Comprehensive Nuclear Test Ban Treaty: How the dominoes might fall after U.S. ratification. *The Nonproliferation Review*, 17 (2), 235-257.
- Howlett, D. & Simpson, J. (2005). Nuclear non-proliferation – how to ensure an effective compliance mechanism. In B. Schmitt (Ed.), *Effective non-proliferation: The European Union and the 2005 NPT review conference* (pp. 9-25). Chaillot Paper 77. Consulted on April 14 2010 via <http://www.iss.europa.eu/uploads/media/cp077.pdf>
- IAEA (n.d.). *IAEA safeguards: Stemming the spread of nuclear weapons*. Consulted on December 15 2011 via http://www.iaea.org/Publications/Factsheets/English/S1_Safeguards.pdf
- IAEA (2011). *Status of Safeguards Agreements & Additional Protocols*. Consulted on December 15 via <http://www.iaea.org/OurWork/SV/Safeguards/framework.html>
- Ingram, P. (2008). *Taking responsibility: What can NPT states realistically do to build on today's momentum behind nuclear disarmament?* BASIC Getting to Zero Papers, No 1. Consulted on March 28 2010 via <http://www.basicint.org/gtz/gtz01.pdf>

- International Court of Justice (1996). *Legality of the threat or use of nuclear weapons: advisory opinion of 8 July 1996*. I.C.J. Reports, 1996, p. 226. Consulted on March 29 2010 via <http://www.icj-cij.org/docket/files/95/7495>.
- International Crisis Group (2009). *Shades of Red: China's debate over North-Korea*. Asia Report No. 179. Consulted on December 30 2011 via http://www.crisisgroup.org/~media/Files/asia/north-east-asia/179_shades_of_red___chinas_debate_over_north_korea.pdf
- International Crisis Group (2010). *The Iran Nuclear Issue: The View from Beijing*. Asia Briefing No.100. Consulted on December 30 2011 via <http://www.crisisgroup.org/~media/Files/asia/north-eastasia/b100%20The%20Iran%20Nuclear%20Issue%20The%20View%20from%20Beijing.pdf>
- Johnson, R. (1995). *Indefinite extension of the non-proliferation treaty: Risks and reckonings. Part I: Introduction*. Acronym report no.7. Consulted on April 2 2010 via <http://www.acronym.org.uk/acrorep/a07intro.htm>
- Johnson, R. (2000). The 2000 NPT review conference: A delicate, hard-won compromise. *Disarmament Diplomacy*, No. 46. Consulted on April 23 2010 via <http://www.acronym.org.uk/dd/dd46/46npt.htm>
- Johnson, R. (2005). Politics and protection: Why the 2005 NPT review conference failed. *Disarmament Diplomacy*, No. 80. Consulted on April 9 2010 via <http://www.acronym.org.uk/dd/dd80/80npt.htm>
- Johnson, R. (2010). Rethinking the NPT's role in security: 2010 and beyond. *International Affairs*, 86 (2), 429-445.
- Joseph, R.G. & Reichart, J.F. (1998). The case for nuclear deterrence today. *Orbis*, 42 (1), 7-19.
- Kalionzes, T. & McGrath, K. (2010). *Obama's nuclear nonproliferation and disarmament agenda: Building steam or losing traction?* Consulted on April 10 2010 via http://www.nti.org/e_research/e3_obama_administration_agenda.html
- Kerr, P. (2007). ElBaradei: IAEA budget problems dangerous [electronic version]. *Arms Control Today*, 37 (July/August).
- Kucia, C. (2003). NPT meeting confronts new nuclear threats [electronic version]. *Arms Control Today*, 33 (June).
- March, J.G. & Olsen, J.P. (1984). The new institutionalism: Organizational factors in political life. *The American Political Science Review*, 78 (3), 734-749.
- May, M. (2008). The trouble with disarmament. *Bulletin of the Atomic Scientists*, 64 (5), 20-21.
- Meyer, P. (2009a). A fissile material (cut-off) treaty: Some observations on scope and verification. *Disarmament Diplomacy*, No. 91. Consulted on April 23 2010 via <http://www.acronym.org.uk/dd/dd91/91pm.htm>
- Meyer, P. (2009b). Breakthrough and breakdown at the Conference on Disarmament: Assessing the prospects for an FM(C)T [electronic version]. *Arms Control Today*, 39 (September).
- Mian, Z. & Nayyar, A.H. (2010). Playing the nuclear game: Pakistan and the fissile material cutoff treaty [electronic version]. *Arms Control Today*, 40 (April).
- Mochizuki, M. (2007). Japan tests the nuclear taboo. *The Nonproliferation Review*, 14 (2), 303-328.

- Müller, H. (2001). The future of arms control. In B. Schmitt (Ed.), *Nuclear weapons: a new great debate* (pp. 33-52). Chaillot Paper 48. Consulted on March 29 2010 via <http://www.iss.europa.eu/uploads/media/cp048e.pdf>
- Müller, H. (2003). Germany and WMD proliferation. *The Nonproliferation Review*, 10 (2), 1-20.
- Müller, H. (2005). *The 2005 NPT review conference: Reasons and consequences of failure and options for repair*. The Weapons of Mass Destruction Commission. No. 31. Consulted on April 9 2010 via <http://www.wmdcommission.org/>
- Müller, H. (2008). The future of nuclear weapons in an interdependent world. *The Washington Quarterly*, 31 (2), 63-75.
- Nunn, S. (2007). *The mountaintop: A world free of nuclear weapons*. Consulted on March 26 2010 via http://www.nti.org/c_press/speech_samnunn_cfr07.pdf
- Ogilvie-White, T. & Simpson, J. (2003). The NPT and its 2003 prepcom session: A regime in need of intensive care. *The Nonproliferation Review*, 10 (1), 40-58.
- Orlov, V.A. & Vinnikov, A. (2005). The great guessing game: Russia and the Iranian nuclear issue. *The Washington Quarterly*, 28 (2), 49-66.
- Payne, K.B. (2005). The nuclear posture review: Setting the record straight. *The Washington Quarterly*, 28 (3), 135-151.
- Perkovich, G. & Acton, J.M. (2009). Abolishing nuclear weapons. In G. Perkovich & J.M. Acton (Eds.), *Abolishing nuclear weapons: a debate* (pp. 21-138). Carnegie Endowment for International Peace. Consulted on March 26 2010 via http://www.carnegieendowment.org/files/abolishing_nuclear_weapons_debate.pdf
- Pomper, M.A. (2009). EU pledges funds for IAEA fuel bank [electronic version]. *Arms Control Today*, 39 (January/February).
- Potter, W., Lewis, P., Mukhatzhanova, G. & Pomper, M. (2010). *The 2010 NPT Review Conference Deconstructing Consensus*. CNS Special Report. Consulted on December 26 2011 via http://cns.miis.edu/stories/pdfs/100617_npt_2010_summary.pdf
- Rademaker, S. (2007, May 7th). Blame America first. *The Wall Street Journal*, p. A15. Consulted on March 27 2010 via <http://www.bgrdc.com/x-news/archives/14-rademakerwsj050707.pdf>
- Rauf, T. (1998). The april 1998 NPT prepcom. *The Nonproliferation Review*, 5 (2), 121-131.
- Rauf, T. (2000). The 2000 NPT review conference. *The Nonproliferation Review*, 7 (1), 146-161.
- Rauf, T. & Johnson, R. (1995). After the NPT's indefinite extension: The future of the global nonproliferation regime. *The Nonproliferation Review*, 3 (1), 28-42.
- Reaching Critical Will (2010). *Reaching Critical Will's guide to the Conference on Disarmament*. Consulted on April 19 2010 via <http://www.reachingcriticalwill.org/political/cd/cdbook2010.pdf>
- Redden, K.J. (2003). Inspecting the inspectorate: A look at financial and political support for the IAEA. *The Nonproliferation Review*, 10 (3), 34-47.
- Rissanen, J. (2006). Time for a fissban – or farewell? *Disarmament Diplomacy*, No. 83. Consulted on April 19 2010 via <http://www.acronym.org.uk/dd/dd83/83fissban.htm>
- Sadjapour, K. (2011). Containing the Iranian Nuclear Threat. Consulted on December 15 2011 via <http://carnegieendowment.org/2011/11/10/containing-iranian-nuclear-threat/721g#NIE>

- Sagan, S.D. (1996). Why do states build nuclear weapons?: Three models in search of a bomb. *International Security*, 21 (3), 54-86.
- Shultz, G.P., Perry, W.J., Kissinger, H.A. & Nunn, S. (2007, January 4th). A world free of nuclear weapons. *The Wall Street Journal*, p. A15. Consulted on March 26 2010 via http://www.nuclearsecurityproject.org/atf/cf/%7B1FCE2821-C31C-4560-BEC1-BB4BB58B54D9%7D/TOWARD_A_NUCLEAR_FREE_WORLD_OPED_011508.PDF
- Shultz, G.P., Perry, W.J., Kissinger, H.A. & Nunn, S. (2008, January 15th). Toward a nuclear-free world. *The Wall Street Journal*. Consulted on March 26 2010 via http://online.wsj.com/public/article_print/SB120036422673589947.html
- Simpson, J. (2004). The nuclear non-proliferation regime: back to the future? *Disarmament Forum*, 2004 (1), 5-16. Consulted on March 30 2010 via <http://www.unidir.org/pdf/articles/pdf-art2015.pdf>
- Singelee, M. & Johnson, R. (2010). NPT Day 13: Roundup on Main Committee III on nuclear energy, safety, security and institutional issues. Consulted on December 15 2011 via <http://acronyminstitute.wordpress.com/2010/05/17/day-13-committee-iii/>
- Spies, M. (2009). Proposals, positions and prospects: Issues facing the 2010 NPT review conference. *Disarmament Diplomacy*, No. 90. Consulted on April 10 2010 via <http://www.acronym.org.uk/dd/dd90/90nptms.htm>
- Stoiber, C. (2003). The evolution of the NPT review conference final documents, 1975-2000. *The Nonproliferation Review*, 10 (3), 126-166.
- Tannenwald, N. (2007). *The nuclear taboo: the United States and the non-use of nuclear weapons since 1945*. Cambridge: Cambridge University Press.
- Tertrais, B. (2010). The illogic of zero. *The Washington Quarterly*, 33 (2), 125-138.
- UNIDIR (2009). Getting the Conference on Disarmament back to substantive work: food for thought. *Disarmament Forum*, 2009 (2), 9-18. Consulted on April 24 2010 via <http://www.unidir.org/pdf/articles/pdf-art2859.pdf>
- UNIDIR, 2011. Fissile Material Negotiations in the Conference on Disarmament. Consulted on December 30 2011 via <http://unidir.org/pdf/ouvrages/pdf-1-92-9045-010-H-en.pdf>
- United Nations General Assembly (1993). A/RES/48/75/L.
- United Nations Security Council (2009). S/RES/1887.
- U.S. Department of Defense (2010). *Nuclear Posture Review Report*. Consulted on April 10 2010 via <http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf>
- U.S. Department of State (2010). *New Strategic Arms Reduction Treaty*. Consulted on April 10 2010 via <http://www.state.gov/documents/organization/140035.pdf>
- Waltz, K.N. (1981). *The spread of nuclear weapons: More may be better*. Adelphi Papers 171. London: International Institute for Strategic Studies. Consulted on March 26 2010 via <http://www.mtholyoke.edu/acad/intrel/waltz1.htm>
- Wendt, A. (2004). *Social theory of international politics* (2nd ed.). Cambridge: Cambridge University Press.
- Yudin, Y. (2011). The nuclear fuel cycle: Meeting the global challenge. Consulted on December 30 2011 via http://www.unidir.ch/pdf/conferences/yudin_mnas_13oct11.pdf
- Zhangh, H. (2011). China's HEU and plutonium production and stocks. *Science and Global Security*, 19, 68-89.