



THESIS APPROVED BY

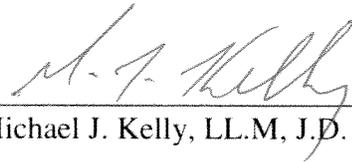
7/22/2013  
Date



Elizabeth Elliot-Meisel, Ph.D., Chair



Terry D. Clark, Ph.D.



Michael J. Kelly, LL.M, J.D.



Gail M. Jensen, Ph.D., Dean

USA-RUSSIA STRATEGIC NUCLEAR ARMS CONTROL: THE  
CONTINUED IMPORTANCE OF VERIFICATION

---

By  
Matthew B. Greenwood

---

A Thesis

Submitted to the faculty of the Graduate School of the Creighton University in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Political Science.

---

Omaha, NE  
May 16, 2013



## **ABSTRACT**

States consider nuclear weapons the ultimate weapon because they are capable of immense destruction. This destructive power worried the USA and Soviet Union, which led them to negotiate arms control treaties that first limited nuclear weapons and then began a process of gradual reduction. Verification of these reductions was a key issue during treaty negotiations during the Cold War to guard against cheating, but why continue to include verification protocols in nuclear arms control treaties between the two countries? This thesis traces the inclusion and exclusion of verification protocols in the START I, II, SORT, and New START. The thesis argues that even after the end of the Cold War verification protocols are both necessary and preferable for the USA and Russia because they provide insight into nuclear force operations, supplement national technical means (NTM) collection, and provide official and unofficial interaction between Russia and the USA. This interaction allows both countries to discuss a variety of subjects, beyond nuclear related issues, which strengthens the bilateral relationship.

## **ACKNOWLEDGEMENTS**

I want to extend a special thanks to Dr. Elizabeth Elliot-Meisel for her guidance and help clarifying various portions of this thesis. I thoroughly enjoyed our discussions on nuclear arms control, intelligence efforts, and the domestic politics within the USA concerning verification. Her patience throughout this master's program as a whole was instrumental in finishing this long process, and I appreciate her balanced approach to mentorship and advising.

I also want to thank my family. My wife Jennifer for pushing me to continue to work on this project through various challenges and handling nearly everything for the family while I spent countless hours in the library. Last, but certainly not least, I want to thank my kids, Anna and Peyton, for their understanding as I disappeared on various nights and weekends instead of spending valuable time with them.

## TABLE OF CONTENTS

ABSTRACT .....	iii
ACKNOWLEDGEMENTS .....	iv
TABLE OF CONTENTS .....	v
INTRODUCTION .....	2
LITERATURE REVIEW .....	11
<i>Disarmament vs. Arms Control</i> .....	<i>11</i>
<i>Intelligence related to verification</i> .....	<i>16</i>
<i>Political considerations in verification</i> .....	<i>24</i>
<i>Cheating problems in arms control agreements</i> .....	<i>32</i>
<i>General Soviet/Russian view of arms control</i> .....	<i>37</i>
<i>General American view of arms control</i> .....	<i>41</i>
TREATY COMPARISON AND ANALYSIS .....	44
<i>START I</i> .....	<i>45</i>
<i>START II</i> .....	<i>61</i>
<i>SORT</i> .....	<i>63</i>
<i>New START</i> .....	<i>77</i>
CONCLUSION .....	96
BIBLIOGRAPHY .....	101

## INTRODUCTION

Many call nuclear weapons the ultimate weapon because they are capable of creating immense destruction and possibly ending the world, depending on the extent to which they are used. The destructive capability of these weapons highlighted the need for the United States of America (USA) and Soviet Union to at first limit these weapons and eventually begin a process of reducing each other's arsenals through treaties. During the Cold War, verification<sup>1</sup> provisions were attached to these treaties to deter cheating. With the end of the Cold War, relations improved between the USA and Russia, so why include verification protocols in nuclear arms control treaties? There is no longer as big of a concern about cheating, but verification is necessary because it serves other purposes. Verification provides insight into nuclear forces operations, supplements NTM collection, and provides interaction between the USA and Russia, both officially and unofficially. This interaction is important because it allows both to communicate on a variety of issues, both nuclear and non-nuclear.

Unlike most research on verification, this thesis focuses on nuclear arms control treaties and compares verification provisions from the Strategic Arms Reduction Treaty (START) through the present New START. This comprehensive examination highlights the debate between policymakers over whether or not formal treaties require verification between the USA and a "friendly" Russia and concludes that despite verification being a costly endeavor in terms of personnel, time, and money, verification protocols are beneficial to both the Russians and Americans regardless of their current relations.

---

<sup>1</sup> Verification does not simply encompass official treaty definitions, which are limited in scope. Verification is a range of activities including National Technical Means, establishing cooperative measures, conducting on-site inspections, and requiring notification for various activities that all work together to give a more complete picture about whether cheating has occurred.

Before focusing on nuclear weapons, it helps to briefly compare verification regimes for other weapons of mass destruction treaties, such as the Biological Weapons Convention (BWC) and Chemical Weapons Convention (CWC). After these treaty discussions, a brief overview of nuclear arms control treaties will set the stage for treaty comparisons and analysis. A short discussion defining the difference between intelligence monitoring and verification will be relevant throughout this thesis. Verification relies primarily on intelligence resources, but policymakers determine whether a treaty violation actually occurred and how to respond, if at all, to a violation.

Unlike nuclear weapons, international law makes biological and chemical weapons illegal. Therefore, unlike the bilateral nuclear arms control treaties between the USA and Russia, BWC and CWC have verification regimes applicable to the entire international community. In many aspects, applying verification to the international community is a problem because for verification to be effective there needs to be a certain amount of trust between the parties involved. With so many countries involved, trust amongst all parties is nearly impossible to achieve. This makes for two very different verification regimes between the two conventions, and neither are particularly applicable to bilateral nuclear arms control treaties.

BWC contains the least intrusive verification measures and requires signatories to work together to solve compliance concerns.<sup>2</sup> It does allow states to lodge complaints with the UN Security Council for possible violations, which the Security Council can investigate. The Security Council has never used this power, even with a number of

---

<sup>2</sup> Arms Control Association, *The Biological Weapons Convention (BWC) At a Glance*, September 2012, <http://www.armscontrol.org/factsheets/bwc> (accessed June 3, 2013).

flagrant violations. Furthermore, attempts to strengthen the verification provisions within the BWC have failed.<sup>3</sup> The BWC has a non-intrusive verification regime and does not provide any incentive to comply with its provisions other than following international law.

In contrast, the CWC verification regime provides measures for verifying all chemical weapons-related activities and on-site inspections of the chemical industry to monitor for possible weapons development.<sup>4</sup> The convention requires detailed declarations on chemical weapons programs including industrial facilities associated with certain chemical weapon precursor activities. These declarations are then checked and confirmed by independent inspectors and these inspections are compiled into databases for future reference.<sup>5</sup> In addition to requiring extensive chemical related declarations, the CWC established three types of on-site inspections to increase confidence that the convention is followed.<sup>6</sup> These inspections include routine inspections to verify declarations and ensure everything is within the convention's standards. Challenge inspections occur to clarify situations where violations might be an issue. Finally, investigations of alleged chemical weapons use can also occur.<sup>7</sup> The CWC contains an incentive to cooperate with its provisions because it actually encourages trade on chemical-related items used for peaceful purposes amongst signatories.<sup>8</sup> If member states

---

<sup>3</sup> Ibid.

<sup>4</sup> Peter Boehme, *The Verification Regime of the Chemical Weapons Convention: An Overview*, November 28, 2008, <http://www.opcw.org/news/article/the-verification-regime-of-the-chemical-weapons-convention-an-overview/> (accessed June 3, 2013).

<sup>5</sup> Ibid.

<sup>6</sup> Arms Control Association, *The Chemical Weapons Convention (CWC) at a Glance*, October 2010, <http://www.armscontrol.org/factsheets/cwcglance> (accessed June 3, 2013).

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

violate the treaty's provisions, these trade rights can be suspended.<sup>9</sup> Therefore, CWC contains both intrusive verification provisions and incentives to ensure compliance, unlike BWC.

During the Cold War, the USA and the Soviet Union were in near constant competition to build massive arsenals of nuclear weapons to counter the other's capabilities. Each side prepared for a nuclear war, considered the inevitable outcome of tensions, all the while dreading the consequences of these actions. Several crises, most notably the Cuban Missile Crisis, drove these states toward open hostilities and made it clear to leadership on both sides of the conflict that nuclear war would lead to mutual destruction with no winners. Leadership acknowledged that slowing down the nuclear arms buildup might reduce the chance of conflict, so President Richard Nixon signed the Strategic Arms Limitation Treaty (SALT) in 1972, which limited certain actions by either side. The subsequent treaty, SALT II, caused numerous problems and President Ronald Reagan eventually dismissed the idea of limitations in favor of a more radical approach, nuclear arms reduction. Thus began the process of negotiating START that departed significantly from previous treaties because it sought to reduce the number of nuclear weapons. This departure served as a basis for future treaties and any analysis of the post-Cold War strategic nuclear treaties must begin with START I.

Political Scientist Joseph Nye argued that improved relations between states reduced anxiety about nuclear weapons and the urgency associated with arms control initiatives.<sup>10</sup> Although improved relations reduced anxiety, it did not eliminate anxiety, so Russia and the USA still maintain a nuclear arms reduction treaty. While there is a

---

<sup>9</sup> Ibid.

<sup>10</sup> Joseph S. Nye, Jr., "Arms Control After the Cold War," *Foreign Affairs*, 1989/1990: 42.

more agreeable relationship between Russia and the USA, where balancing the other's policy objectives worldwide is not of supreme importance, there is still tension on issues and concern over each state's nuclear arsenal. Much of this concern deals with the fact that these two states have the largest nuclear arsenals in the world and are still capable of annihilating the other in a nuclear exchange. If both sides trust each other more than during the Cold War, why is it necessary to spend time and effort to verify that nuclear arms reduction takes place? There are two primary reasons dealing with both the intelligence<sup>11</sup> and political aspects of verification. From an intelligence standpoint, verification provides both sides with insight into nuclear forces operations and can help supplement intelligence collection efforts that may not always be as accurate as one needs in dealing with nuclear weapons. Verification increases interaction among the signatories, so from a political point of view it can help to improve diplomatic relations and dialogue that might actually prevent miscalculations about intent.

Since the 1980s and early 1990s was a time of, at best, tenuous agreement between the USA and USSR, and at worst increased tensions that nearly led to war, START I and II were negotiated and signed in line with Nye's arguments on the importance of nuclear treaties during times of increased tension. Neither the USA nor the Soviet Union fully trusted the another, but the Reagan Administration still wanted these treaties to reduce nuclear weapons and understood that a comprehensive verification protocol was necessary to prevent cheating. Although this was logical and might seem easy to accomplish, the mutual distrust and suspicion caused both sides to address verification issues carefully to prevent cheating and ensure that they were not at a

---

<sup>11</sup> For the purposes of this paper, intelligence will refer to information concerning a potential enemy or an agency/activity dealing with obtaining this information.

disadvantage in some way. Reagan ultimately decided to design a treaty with a complex set of verification provisions that detected militarily significant violations while overlooking minor, insignificant violations. This verification standard became what the U.S. Senate used to judge all subsequent strategic nuclear arms treaties and their verification measures.

In a period of only two years, 1989-91, the Cold War ended, the Soviet Union collapsed, and relations improved between Russia and the USA. Neither side required nuclear forces to sit in alert status in anticipation of a surprise nuclear attack. Nuclear arms control was less of a priority and no significant strategic arms agreements occurred until 2002 when Presidents George W. Bush and Vladimir Putin signed the Strategic Offensive Reduction Treaty (SORT). SORT was another drastic change from previous nuclear arms control efforts because it contained no explicit verification measures, as found in START I. Without improved relations between the USA and Russia, SORT's lack of verification would have been impossible. SORT reflected the need for treaties to reflect the current security environment and not yesterday's.<sup>12</sup> If a treaty reflects yesterday's security environment, it becomes useless for all practical purposes because it deals with old assumptions and priorities for national security that may no longer be valid. SORT allowed both sides to cut their respective nuclear weapons, but did not require a massive diplomatic undertaking to negotiate the treaty. The lack of such a diplomatic effort was partly because SORT was inherently flexible and allowed both states to determine what their nuclear arsenal would look like. It also differed from previous efforts because it contained no verification procedures or protocols, which

---

<sup>12</sup> Stephen Cambone, "An Inherent Lesson in Arms Control," *The Washington Quarterly*, 2000: 216.

implied to some observers that these procedures were unnecessary. The debates surrounding SORT ratification, and even discussions after ratification, indicated that this assumption was clearly not the case. SORT proponents argued that SORT needed no verification procedures because START I's verification procedures were still in place.

START I's verification protocols expired in December 2009, and the Obama Administration initiated negotiations for New START shortly after taking office in 2009. This treaty further reduces nuclear weapons, but perhaps more importantly, reestablishes verification measures. Since SORT contained no verification measures, there existed no legal reason for the USA and Russia to allow the other to verify what occurred with their respective nuclear arsenals. Both agreed to continue to abide by START I's verification provisions, but there existed nothing to force compliance. Compliance is always an issue with nuclear arms control treaties because nuclear war is the only absolute enforcement mechanism, which is precisely what these treaties are designed to prevent. Nuclear arms control treaties between the USA and Russia contain vague language, often with regards to definitions for various items within the treaty, because this allows a certain amount of minor cheating that is expected by both sides. Both sides accept this cheating as long as it does not give one side an advantage. In order to avoid violating the 1969 Vienna Convention on the Law of Treaties, negotiators purposely leave some terms vague while explicitly defining others so that both sides can interpret the treaty in "good faith".<sup>13</sup>

Given the relatively stable post-Cold War relationship, it would seem that there was no need to negotiate a new treaty that implemented verification provisions, but, in fact, both states sought such protocols. New START negotiations happened rapidly to

---

<sup>13</sup> *Vienna Convention on the Law of Treaties*, Treaty, Vienna: United Nations, 1969: 12-13.

put a new treaty into effect. The most significant part of this new treaty was the reestablishment of verification provisions to help provide insight into both sides' nuclear arsenals and improving the dialogue and relationship between the two former rivals. Verification was crucial to increase transparency on each side's nuclear arsenal, build confidence that surprise attacks were unlikely, and reduce the risk of miscalculation during times of increased tensions.

Verification's primary purpose is to promote compliance with the treaty and increase both the cost and risk of cheating.<sup>14</sup> It is necessary to distinguish between intelligence monitoring and verification because both have similar characteristics but different goals. Monitoring is an intelligence activity that consists of detecting, identifying, and measuring activities regardless of whether a treaty is in place. It is designed to provide some level of warning to policymakers.<sup>15</sup> Verification is a judgmental process, often political, because it uses data to determine compliance and either analysts or policymakers have to judge whether identified areas of non-compliance are worth challenging the other country's practices based on how much cheating is deemed acceptable by policymakers.<sup>16</sup> The judgments on whether or not to react to cheating incorporate assessments of whether a state's interests are better served with a treaty regardless of whether one can effectively verify it or not.<sup>17</sup> It is important to identify from the outset that there is no such thing as perfect verification because it relies

---

<sup>14</sup> James Brown, "Introduction" in *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown, and William K. Cheek, McLean: Brassey's (US), Inc., 1992: xv.

<sup>15</sup> Dean A. Wilkening, "Monitoring Bombers and Cruise Missiles," in *Verification and Arms Control*, edited by William C. Potter, Lexington: Lexington Books, 1985: 108.

<sup>16</sup> William J. Durch, "Verification of Limitations on Antisatellite Weapons," in *Verification and Arms Control*, edited by William C. Potter, Lexington: Lexington Books, 1985: 90.

<sup>17</sup> Douglas George, "The Estimative Process," in *Intelligence and Arms Control: A Marriage of Convenience*, edited by Thomas J. Hirschfeld, Austin: University of Texas, 1987: 22.

on intelligence sources and methods, so there is always some risk that cheating will go unnoticed.<sup>18</sup> Policymakers must determine whether verification provisions detect enough cheating to give them confidence that the intent of treaty is being followed and if violations are discovered, whether to challenge these violations. Each intelligence source and method has both advantages and disadvantages based on its capabilities. This is one reason why intelligence professionals provide assessments, with degrees of confidence, instead of stating many things as absolute fact. However, there is little doubt that verification is necessary. As will be discussed later, verification builds trust which is vital when tensions and misunderstandings arise.

Nuclear weapons, as a class of weapons of mass destruction, differ from biological and chemical weapons because they are legal weapons. Although both the BWC and CWC contain verification protocols, since these treaties apply to a variety of countries, they are harder to implement and for signatories to agree to change measures. Since nuclear weapons were a primary focus between the USA and Soviet Union during the Cold War, both countries considered verification key to any treaties that actually reduced these weapons. In the past, concern over cheating dominated verification discussions, and although there is still some mention of cheating both Russia and the USA understand that verification helps provide invaluable insight into nuclear force operations that can help reduce miscalculations during times of crisis. To further answer the question of why verification protocols are needed in nuclear arms control treaties, this thesis will examine the differences between arms control and disarmament, highlight the

---

<sup>18</sup> Ronald F. Lehman, II, "Verification in the Age of Glasnost and Open Skies," in *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown, and William K. Cheek, McLean: Brassey's (US), Inc., 1992: 11.

intelligence and political dimensions of verification, provide general views of Russians and Americans towards arms control and verification, and compare verification measures in nuclear arms control treaties from START I through New START.

## **LITERATURE REVIEW**

### *Disarmament versus arms control*

Disarmament and arms control have two very different meanings, so it is important to define these terms and examine how each relates to verification problems. As Nye noted, arms control is usually not a key factor during times of relaxed relations, but it remains a focus for Russia and the USA due to variety of issues. Some of these issues still relate back to competing Cold War theories of disarmament, even while arguments exist that the end of the Cold War necessitates new theories of disarmament because relations between Russia and the USA have improved. With this improved relationship, can President Barrack Obama continue Reagan's goal for a nuclear free world? There are a number of verification challenges with this goal that will likely prevent it from ever happening.

Arms control is a relative concept in which states agree to limit certain types of weapons or reduce arms levels in relation to one another in an attempt to stabilize an existing relationship.<sup>19</sup> This is different from disarmament that reduces overall existing military capabilities, essentially an absolute reduction in weapons systems.<sup>20</sup> Scholars and policymakers normally define disarmament as reducing weapons to zero, an extremely lofty goal. Furthermore, nuclear weapons provide a greater degree of

---

<sup>19</sup> Sharif M. Shuja, "Looking Forward by Looking Back: A Pragmatic Look at Nuclear Non-Proliferation, Disarmament and Arms Control," *National Observer*, 2002: 62.

<sup>20</sup> *Ibid.*

complexity because the arms control process is one of continued risk management and there is a greater risk for getting things wrong when dealing with nuclear weapons. By agreeing to lower overall nuclear weapons numbers, a state verifies that these agreements do not threaten its national security.<sup>21</sup> The same is true of disarmament agreements, but these now require extremely intrusive verification measures to ensure that even minor cheating can be detected. When dealing with reducing nuclear weapons to zero, even minor cheating threatens a country's security because of the immense destructive capability of a single warhead.

Several arguments brought arms control and disarmament discussions back into the international arena after a period of reduced tensions following the end of the Cold War. These reasons included the threat of nuclear terrorism, the cumulative impact of an increase in tensions between Russia and the North Atlantic Treaty Organization (NATO), the international community's inability to deal with economic crises, and, primarily, because American foreign policy elites thought nuclear arms control talks were an issue once again.<sup>22</sup> Arms control is important because it provides a mechanism that adjusts relationships between two states. Verification plays a role in this adjustment because it builds confidence between rivals by preventing miscalculations based on less than accurate intelligence.<sup>23</sup> Although nuclear competition between the USA and Russia no

---

<sup>21</sup> Rod Lyon, "A Pillar of Salt: the Future of Nuclear Arms Control," *Australian Journal of International Affairs*, 2000: 304.

<sup>22</sup> Lawrence Freedman, "A New Theory for Nuclear Disarmament," *Bulletin of the Atomic Scientists*, 2009: 14-15.

<sup>23</sup> *Ibid.*, 21.

longer drives relationships within the international system, Russia's and the USA's huge nuclear arsenals continue to make it important to engage in bilateral arms reduction.<sup>24</sup>

There were essentially two competing theories of nuclear disarmament during the Cold War. Philip Noel-Baker argued that unless nuclear weapons were the primary object of international policy, talks on disarmament were doomed to failure.

Furthermore, he believed that collective security would make disarmament possible.<sup>25</sup>

He argued that everyone accepted the security of one another, which reduced the security dilemma that caused them to build up weapons. With the need to build weapons reduced, even nuclear disarmament was possible. Hedley Bull dismissed this theory and indicated that states must provide for their own security and not rely on another state, so

disarmament could only occur when something reduced tensions. He argued that during an arms race, build-ups were a consequence and not the cause of tensions.<sup>26</sup> During the

Cold War, policymakers followed Bull's theory, denied collective security was possible, and built up nuclear arms to counter the other's perceived increases in nuclear weapons.<sup>27</sup>

With the end of the Cold War, Lawrence Freedman argued that a new theory of disarmament was needed because there was a new international system.<sup>28</sup> It was unclear what he thought the new international system looks like. Anarchy still characterizes the international system.<sup>29</sup> Although it is no longer the bipolar world of conflict between the USA and the Soviet Union, which primarily focused on military power, it is far from

---

<sup>24</sup> Lyon, "Pillar of Salt," 305.

<sup>25</sup> Freedman, "A New Theory," 17-18.

<sup>26</sup> Ibid.

<sup>27</sup> Ibid., 20.

<sup>28</sup> Ibid., 14.

<sup>29</sup> Anarchy means that there is no worldwide government and no superior power that can legitimately resolve disputes, enforce laws or create order in the international system. This reflects the independence of all states with no central authority above them.

peaceful as states continue to compete with one another. This competition between states causes less friction than during the Cold War and frequently includes more economic tension or other dimensions of national power instead of indirect military conflict. Furthermore, Freedman stated that the founding assumption of any new theory must be the same as the old one: that arms control is a means to an end where the primary goal is preventing nuclear war. The secondary goal is mitigating the effects of such a war should it occur.<sup>30</sup> Freedman's underlying premise that a new international system exists calls into question his argument on the need for a new theory on disarmament because although the world changed, the international system remains anarchical. Nuclear weapons still possess the capability for immense destruction, so one cannot ignore them. The USA and Russia find reasons to negotiate nuclear arms control treaties that are more cost effective and less cumbersome, but they still acknowledge that both domestic and international politics necessitate these treaties for reassurance that nuclear war will not easily occur.

The Obama Administration adopted President Reagan's goal of a nuclear weapons free world and within this goal there are the same challenges that anyone faces with regard to disarmament. These challenges include not only how to get to zero nuclear weapons, but how to stay at zero. Further, would the international system remain stable with no nuclear weapons?<sup>31</sup> Nuclear weapons were, and will likely continue to be, extremely important for stabilizing the international system and may have prevented the

---

<sup>30</sup> Ibid., 29.

<sup>31</sup> Lyon, "Pillar of Salt," 27.

Soviet Union and the USA from going to war during the Cold War.<sup>32</sup> START I and II were one way to restructure both the Soviet Union's and the USA's nuclear arsenal that improved stability within the international system.<sup>33</sup> These treaties halted the arms buildup and reduced the overall number of nuclear weapons. This reduced the risk of nuclear war between the USA and the USSR because it changed the calculation on using nuclear weapons and increased contact amongst the two rivals, which helped prevent miscalculations and increased cooperation.

One of the most significant problems with total disarmament is that no treaty has yet to deal with aggregate numbers of nuclear weapons because limitations in National Technical Means (NTM)<sup>34</sup> make verifying smaller weapons nearly impossible.<sup>35</sup> States can easily hide and move these smaller weapons, so NTM cannot accurately track these systems to ensure their elimination with any level of confidence. These weapons' transportability make it possible to deceive on-site inspectors because the smaller the weapon the easier it is to move. The key question of the nuclear free weapons movement is really whether it is actually verifiable and enforceable.<sup>36</sup> As previously noted, verification is inherently inaccurate and the anarchical international system prevents any

---

<sup>32</sup> John Lewis Gaddis, *The United States and the End of the Cold War: Implications, Reconsiderations, Provocations*, New York: Oxford University Press, 1992: 118.

<sup>33</sup> *Ibid.*, 301.

<sup>34</sup> National Technical Means refers to satellite intelligence capabilities, but most treaties that contain verification procedures use this term because it does not have the same negative connotation of spying as "satellite intelligence capabilities". Spying is something that no country can legally sanction within a treaty. NTM usually refers to imagery intelligence that consists of taking a photograph, or image, at a given moment in time. This image does not show what happened before or after that picture and various countermeasures can deceive these imagery sensors, whether intentionally or unintentionally. This is one of the inherent weaknesses associated with this particular intelligence source. The advantage is that NTM can legally overfly any country, so it gives intelligence analysts images of locations they cannot get by any other method.

<sup>35</sup> *Ibid.*, 298.

<sup>36</sup> Andrew S. Kovich, "50 Years Later: Tough Questions Facing Nuclear Arms Reduction," *Air & Space Power Journal*, 2009: 41.

type of substantial enforcement mechanisms other than using nuclear weapons, in the case of nuclear arms related treaties. Even if one accepts that verification and enforcement is possible, the biggest dilemma becomes whether states can agree to intrusive verification protocols to prove disarmament and accept the potential risk to classified, or sensitive, information through these protocols.<sup>37</sup>

One of the biggest issues with disarmament is that any agreement must ensure no one cheats. Since this is virtually impossible, a security dilemma is more likely to occur in a disarmament scenario because states cannot fully ensure that others do not have nuclear weapons. Since nuclear weapons are the ultimate weapons, one cannot assume the risk to security and it is necessary to build nuclear weapons to ensure security.<sup>38</sup>

Although disarmament is defined as an absolute reduction of weapons and is extremely unlikely due to the anarchical international system, arms control is a valuable and viable option to limit nuclear weapons. Verification is easiest to accomplish in an arms control regime because much less intrusive measures are needed to build confidence between states. Although the end of the Cold War helped improve relations, the destructive power of nuclear weapons means the old theories of disarmament hold true today. Nuclear weapons will probably never be eliminated, and much of this has to do with the continued need for verification and its reliance on imperfect intelligence sources and methods.

### ***Intelligence considerations in verification***

Intelligence sources and methods play a critical role in any verification regime, but these sources and methods all have inherent strengths and weaknesses. NTM is a key

---

<sup>37</sup> Ibid.

<sup>38</sup> Randy Rydell, "Disarmament without Agreements?" *International Negotiation*, 2005: 370.

source for any verification regime because it is legalized spying, but these assets are not the only source used for verification efforts. The variety of sources and their inherent weaknesses make intelligence much less reliable than the public often assumes. There are even times when sources are lost for a variety of reasons, and in the case of nuclear weapons this can significantly increase concern about a nuclear attack. Verification regimes alleviate these concerns by containing various collaborative measures that continue to provide insight into nuclear force operations and help avoid miscalculations. Verification is an extremely resource intense activity for the intelligence community, but with the present worldwide focus and need to track individual terrorists, verification provisions can actually free up resources to tackle these other difficult tasks because they supplement NTM collection.

Verification uses intelligence sources and analysts to report treaty violations or determine the effectiveness of a treaty. Intelligence is never an exact science and although certain scientific methodologies apply to certain techniques, there is a degree of finesse associated with intelligence analysis. Often the public assumes that intelligence sources are better than they are, which causes problems when explaining intelligence “failures.” Intelligence professionals cannot publicly highlight certain limitations, so it is nearly impossible to explain to the public why things happen, including the fact that verification cannot be one hundred percent accurate. Because of these inherent inaccuracies with intelligence, analysts often struggle to define the enemy with enough precision to advise policymakers on decisions and to help posture a state’s response to cheating. This is primarily because intelligence analysts rely on incomplete information to make assessments, so they often use worst-case analysis to judge an adversary’s

strength. This allows policymakers to devote adequate resources to counter a threat and cover a wide range of possibilities considered less than the worst case. The problem is that this analytical methodology can lead to crises because analysts can misperceive the enemy's actual intentions.<sup>39</sup> NTM can reduce the risk of misperception because it allows military intelligence analysts to more accurately assess an adversary's military strength and possibly even give insights into intentions.<sup>40</sup>

NTM plays a critical role in verifying arms control agreements and the precedent was set during the Cold War when NTM legalized spying by both the USA and the Soviet Union.<sup>41</sup> As previously mentioned, verification measures often use highly secret methods that make them difficult to discuss publicly. This inability to have an informed public dialogue can complicate, at least in the USA, treaty ratification because Americans demand certain answers from their politicians and these politicians must publicly reassure their constituents in order to be reelected.<sup>42</sup> As more information becomes declassified, it should serve as a basis for future research into verification and give more specificity to answer verification questions in the post-Cold War security environment. Until this occurs NTM will continue to play a vital role in treaty verification and this is why it is essential that states preserve these critical space assets from a treaty perspective.<sup>43</sup>

Although a bit counterintuitive, the collapse of the Soviet Union and the end of the Cold War made verification even more important for the Russians. When the Soviet Union collapsed, Russia lost some of its missile early warning sites in Ukraine and

---

<sup>39</sup> Thomas Graham, "The Essentiality of Effective Verification: From Sputnik to the Space Stations," *Problems of Post-Communism*, 2006: 17.

<sup>40</sup> *Ibid.*, 18.

<sup>41</sup> John Lewis Gaddis, *The Long Peace: Inquiries into the History of the Cold War*, New York: Oxford University Press, 1987: 196.

<sup>42</sup> *Ibid.*, 214.

<sup>43</sup> Graham, "The Essentiality of Effective Verification," 28.

Belarus. Its own satellite system for warning was likely not very good either.<sup>44</sup> In the immediate aftermath of the Soviet Union's collapse, verification was essential because it reassured the Russians that the Americans were not going to attack.<sup>45</sup> It is still unclear if the Russians have incomplete satellite or ground based coverage of certain missile attack corridors, which could increase the risk of Russian miscalculation during a crisis.<sup>46</sup> There is no way to assess Russian, or any other states', intelligence capabilities because these gaps are often the most closely guarded secrets. Once countries know about a collection gap, it is easier to devise ways to exploit this gap and this can be especially detrimental in the case of nuclear weapons. The argument for continued verification also applies to America because, for example, intelligence leaks erode American intelligence capabilities that make verification more difficult and increase the likelihood of surprise.<sup>47</sup> As previously noted, the American public assumes that its intelligence is better than it really is, so New START's verification measures are essential to maintain America's security and confidence in Russia's nuclear weapons practices.

The counterargument to the need for verification is that since the Cold War ended, USA-Russia relations have improved, so less intrusive measures are more useful for treaty verification. These measures rely heavily on NTM even though deception of these

---

<sup>44</sup> General Charles Horner, *Nuclear Arms Control, Non-Proliferation and Disarmament in the Post-Cold War Security Environment: Keynote Address*, Spring/Summer 1999, <https://login.cuhsl.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=3451961&site=ehost-live> (accessed February 25, 2013).

<sup>45</sup> Ibid.

<sup>46</sup> Stephen J. Cimbala, "U.S. and Russian Strategic Nuclear Forces Under Cooperative Security: Moscow and After," *Journal of Slavic Military Studies*, 2005: 185-186.

<sup>47</sup> Cambone, "An Inherent Lesson," 212.

NTM is easily accomplished.<sup>48</sup> Cooperative measures can be more cost effective than on-site inspections because on-site inspections require sending people to the other state, which requires people, time and money to accomplish.<sup>49</sup> These cooperative measures can include exchanging data on nuclear systems, standard operating procedures that detail typical crisis responses, and defense budget information that specifically outlines money spent on nuclear weapons and related tasks.<sup>50</sup> The problem with cooperative measures, however, is that there must be a degree of trust between both states and they must ignore all the added benefits of other verification measures such as building confidence and preventing miscalculations due to inaccurate intelligence.

The historical view on intelligence production was that arms control agreements complicated this process because they required a higher level of precision than what was normally required for intelligence operations.<sup>51</sup> Given the current need for intelligence to track individuals rather than large state militaries, this argument may no longer be valid. Verification can actually ease the intelligence problem because it allows an analyst in either country to focus on the other state's nuclear weapons stockpile at certain times and note anything that violates a treaty. Notification procedures help this problem because with notifications an analyst can assess with relative confidence what the Russians or Americans are doing instead of attempting to get multiple sources and piece together clues to advise decision makers on potential outcomes. This frees analysts to focus on

---

<sup>48</sup> Charles A. Appleby and John C. Baker, "Verification and Mobile Missiles: Deterrence, Detection, or Assurance?" in *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown, and William K. Check, McLean: Brassey's (US), Inc., 1992: 60.

<sup>49</sup> Jack Mendeloshn, "Next Steps in Nuclear Arms Control," *Issues in Science and Technology*, 1993: 31.

<sup>50</sup> Ibid.

<sup>51</sup> Thomas J. Hirschfeld, "A Marriage of Convenience," in *Intelligence and Arms Control: A Marriage of Convenience*, edited by Thomas J. Hirschfeld, Austin: University of Texas, 1987: 14.

other problems as both countries' interests have expanded beyond the threat of nuclear war with their former Cold War enemy. These interests now span the globe and include some of the more remote areas of the world.

Money, people, equipment, and time essentially define what are considered available resources to the intelligence community, so an emphasis on global awareness causes multiple different security concerns to compete for these same limited resources. Traditionally, a state sought arms control to reduce requirements for resource allocations in an unlimited arms race and the "resources" usually referred to the weapons systems themselves.<sup>52</sup> This same logic applies to intelligence resources. Although verification requires greater precision than monitoring, the combination of cooperative measures, on-site inspections, and NTM make it easier to allocate collection resources. Intelligence analysts can use these measures along with some ad hoc collection requests to verify treaty compliance. One can allocate the rest of its intelligence resources to far more complicated and demanding intelligence problems, like locating terrorists or predicting geopolitical events throughout the world because there is no longer only a single threat for intelligence analysts to focus the vast majority of their time on.

Verification poses risks to collection platforms because when one identifies a verification area of concern during treaty negotiations it reveals possible limits to collection platforms.<sup>53</sup> Intelligence professionals use these same collection platforms against a wide array of national security problems that adversaries can now potentially exploit by knowing about these weaknesses. One can mitigate this risk by asking for an

---

<sup>52</sup> Raymond L. Garthoff, *Détente and Confrontation: American-Soviet Relations from Nixon to Reagan*, Washington D.C.: The Brookings Institution, 2994: 1155.

<sup>53</sup> Philip D. O'Neill, Jr., *Verification in an Age of Insecurity: The Future of Arms Control Compliance*, New York: Oxford University Press, 2010: 97.

array of things that are both confirmed and unconfirmed via collection assets. This can obscure actual collection capabilities and limitations and secure them from further compromise.

Although precise intelligence is essential to verification, it further requires intelligence that is timely and accurate.<sup>54</sup> Since one of verification's purposes is deterring cheating, verification needs to identify these violations quickly so policymakers can decide the next step. Because of this, what states can reliably verify should limit any treaty agreement, and intelligence further influences policy based on both its capabilities and limitations.<sup>55</sup> Furthermore, states should evaluate intelligence collection information and use this data to judge their willingness to enter into a treaty.<sup>56</sup> The politics in verification section explores this issue further including balancing the need to verify treaty provisions while protecting a country's own intelligence capabilities and other sensitive information. As collection assets improve, agreements that are more sophisticated are possible because higher fidelity verification may be possible.<sup>57</sup>

Collection itself cannot adequately answer some problems, such as verifying something that is not readily verifiable, like throw-weight<sup>58</sup>. Throw-weight is difficult to measure because states can only gauge it based on missile tests that might not reveal a missile's full capability. Although certain intelligence methods can reveal whether it is a full capability test, even these methods contain weaknesses that a well-informed

---

<sup>54</sup> Hirschfeld, *A Marriage of Convenience*, 9.

<sup>55</sup> *Ibid.*, 11-12.

<sup>56</sup> Jeffrey Richelson, "Technical Collection and Arms Control," in *Verification and Arms Control*, edited by William C. Potter, Lexington: Lexington Books, 1985: 169.

<sup>57</sup> Hans Mark, "The Technological Dimension," in *Intelligence and Arms Control: A Marriage of Convenience*, edited by Thomas J. Hirschfeld, Austin: University of Texas, 1987: 66.

<sup>58</sup> Throw-weight is the weight of the guidance systems, warheads and penetration aids, which ballistic missiles carry (Sloan and Gray 1982, 77). It is important because it helps to estimate the potential destructive power of a given warhead.

adversary can exploit. Weapon size is also unverifiable because as weapon size decreases its mobility typically increases which further complicates collection efforts.<sup>59</sup> Mobile systems are incredibly easy to hide and hard to detect, especially if countries only rely on NTM to locate these missiles. In fact, unless a state uses something other than NTM assets to verify treaty compliance, arms control cannot go further than imposing ceilings on weapons.<sup>60</sup> This was why START I's verification provisions used both NTM and on-site inspections along with cooperative measures and notifications. This combination reassured the USA and the Soviet Union that arms reductions were possible because cheating was easier to detect.

As noted, all intelligence sources contain strengths and weaknesses that give them some level of uncertainty. Since verification uses these intelligence sources, the same is true for verification provisions within treaties. Even intrusive on-site inspections cannot detect all treaty violations because countries can use various methods to avoid detection.<sup>61</sup> For example, states can declare a facility unsafe to prevent on-site inspections or indicate that it contains sensitive activities not covered within the treaty's verification provisions. A related problem is that inspectors can gain insight on how to defeat certain weapons by noting specific characteristics important to overall weapon function or design. These inspections can also provide a means to proliferate certain technology to other countries, or even non-state actors, for profit.<sup>62</sup> During treaty negotiations, each side needs to weigh carefully both the cost and benefits of on-site

---

<sup>59</sup> George, "The Estimative Process," 23.

<sup>60</sup> Ian Bellany, "An Introduction to Verification." in *The Verification of Arms Control Agreements*, edited by Ian Bellany and Coit D. Blacker, Totowa: Frank Cass & Co. Ltd., 1983: 3.

<sup>61</sup> O'Neill, *Verification in an Age of Insecurity*, 56.

<sup>62</sup> *Ibid.*, 95.

inspections to determine what specific limitations are necessary to prevent disclosure of sensitive technologies. Although the USA, and presumably Russia to some extent, improved its NTM, there remains the problem that intelligence analysts can only verify what is readily viewable and not hidden. Cooperative measures are essential to this effort because they help reduce some weaknesses associated with NTM.<sup>63</sup>

NTM and other intelligence collection sources are essential for verification even though they contain weaknesses that provide an incomplete picture of an adversary's capabilities. These sources will continue to be necessary regardless of relations between the USA and Russia, but the various other verification provisions within nuclear arms control treaties supplement these sources to provide a more accurate picture related to nuclear arms. Cooperative measures are not enough for verification because NTM, on-site inspections, and notifications help confirm what is suspected by intelligence analysts. Both Russia and the USA need to continue to weigh both the cost and benefits of various verification provisions, including inadvertently highlighting intelligence limitations.

#### *Political considerations in verification*

Although intelligence is essential for verification, verification is primarily a political decision that highlights both domestic and international considerations. Intelligence might provide evidence of treaty violations, but it is a political decision whether this violation really matters. These decisions relate back to theories of international relations and essentially boil down to whether minor cheating is important or only militarily significant cheating. Negotiations between Russia and the USA are often difficult because each side places different priorities on different aspects of the

---

<sup>63</sup> Ibid., 89.

treaty. The politics of negotiation and compromise ultimately result in a treaty in which both the USA and Russia work to include their most important concerns.

The politics associated with verification does not lend itself to simple explanations because it contains both domestic and international elements that complicate negotiations.<sup>64</sup> For example, the media often find it easier to explain the differences in on-site inspections quotas than discussing a treaty's actual verification procedures. Therefore, verification debates often seem like a numbers game instead of debating the political situations that necessitate a certain amount of compromise and negotiation.<sup>65</sup> Decisions about verification are inherently political and often politicized in an attempt to persuade others to take a certain side or reject certain provisions.<sup>66</sup> Verification procedures can be written to either facilitate cooperation or inhibit it depending on its technical specificity and how much a state is willing to compromise its sensitive information.<sup>67</sup> Since the international system is inherently anarchical with no way to impose verification regimes on states, the political processes of persuasion, bargaining, compromise, and coalition building create verification processes.<sup>68</sup> Without the ability to compromise and bargain, or if Russia's and the USA's views are too divergent, verification procedures can immediately stop treaty negotiations and arouse suspicion that the negotiations are a cover for more covert intelligence collection requirements.

Mark M. Lowenthal and Joel S. Wit defined two paradigms for how to view verification that address views on treaty violations: strict constructionists and loose

---

<sup>64</sup> Nancy W. Gallagher, *The Politics of Verification*, Baltimore: The John Hopkins University Press, 1999: 56.

<sup>65</sup> *Ibid.*, 35.

<sup>66</sup> *Ibid.*, 214.

<sup>67</sup> *Ibid.*, 47.

<sup>68</sup> *Ibid.*, 215.

constructionists.<sup>69</sup> Strict constructionists downplay military significance and stress the political significance for any treaty violation. They believe any treaty violation is important because it calls into question whether the other signatory believes the treaty is important.<sup>70</sup> A country's adherence to a strict constructionist framework is extremely resource intensive and requires a significantly greater demand on intelligence sources to identify and report every minor treaty violation. Strict constructionists will argue against any follow-on treaties in which one of the parties showed a propensity to violate the terms of the treaty. On the other hand, loose constructionists downplay the political significance and stress the military significance of any treaty violations. This approach allows for some treaty violations as long as states can detect major violations that could cause a military disadvantage.<sup>71</sup> This tactic costs less, in terms of resources, and is easier for intelligence analysts to put into place; there is less concern with identifying every minor violations and more concern with major military developments that might shift the state's overall strategic calculation.

In *The Politics of Verification*, Nancy Gallagher divides views about verification into three categories related to theories about international order.<sup>72</sup> These three categories are the Unilateralists, Arms Control Advocates, and Cautious Cooperators, and they relate to the Hobbesian, Grotian and Kantian theories of international order.<sup>73</sup> The Unilateralists are similar to the strict constructionists and focus on detecting violations from a purely adversarial point of view. They see cooperation as highly unlikely and that

---

<sup>69</sup> Mark M. Lowenthal and Joel S. Wit. "The Politics of Verification," in *Verification and Arms Control*, edited by William C. Potter, Lexington: Lexington Books, 1985: 163.

<sup>70</sup> Ibid.

<sup>71</sup> Ibid., 164.

<sup>72</sup> Gallagher, *The Politics of Verification*, 4-5.

<sup>73</sup> Ibid., 13.

evidence of any violation supports some type of retaliatory response. Both Arms Control Advocates and Cautious Cooperators share characteristics of loose constructionists. Arms Control Advocates focus on militarily significant issues for verification of treaty violations, but still see the international system as primarily adversarial. They maintain that cooperation is only possible when acting unilaterally does not achieve a country's primary goals. Finally, Cautious Cooperators view verification's goal as primarily to reassure everyone of one another's cooperation; they view the international system as one in which cooperation is already widespread. Cautious Cooperators define verification as a managerial function that does not require participants to detect minor treaty violations because they are not important for cooperation on the bigger issues.<sup>74</sup>

Since the end of the Cold War, there is a diminished sense of threat between Russia and the USA that eases some of the demands for verification.<sup>75</sup> During the latter years of the Cold War, political demands for verification often outpaced technical feasibility because, as previously discussed, all intelligence sources have some limitations that make one hundred percent verification impossible.<sup>76</sup> A strict constructionist interpretation on verification is useless because technology might not allow for the detection of every minor treaty violation. In the post-Cold War era, Russia-USA arms control and verification provisions serve as confidence and security building measures rather than trying to detect minor cheating by the other signatory.<sup>77</sup> The loose constructionist viewpoint is more beneficial in this situation. Both sides will be able to detect significant military changes necessary to conduct a surprise attack, which helps

---

<sup>74</sup> Ibid.

<sup>75</sup> Nye, "Arms Control After the Cold War," 49.

<sup>76</sup> Ibid.

<sup>77</sup> Ibid., 45.

prevent miscalculations because states have confidence in the various verification measures and treaty provisions to provide enough warning to prevent this attack from happening.

Gallagher explains that American ideas about verification often contain a variety of contradictions. Domestic support for arms control often requires such intrusive verification arrangements that other states cannot accept them without significant compromises.<sup>78</sup> The contradictions between the USA and the Soviet Union essentially came down to interpretations of verification. American policymakers and negotiators viewed verification as a technical problem to find the truth, so they demanded foolproof verification. The Soviets viewed verification as legalized espionage, so they wanted limited verification that could provide some intelligence on the USA and protect the Soviet Union's secrets.<sup>79</sup> Both the USA and Russia maintain similar views in the post-Cold War era. These divergent views reflect the differences between a relatively open and relatively closed society. Interestingly, it is unlikely that even the USA would be comfortable with certain intrusive verification procedures because of the need to safeguard certain information for national security reasons. However, the USA, as an open society, does not fear most verification requirements because various news sources report quite a bit of America's secrets. Russia still restricts much of this information and verification might give the USA more information than it might already know through various sources, most notably news coverage. Verification is legalized spying; that is why verification provisions are so carefully worded within treaties to ensure that "[a]

---

<sup>78</sup> Gallagher, *The Politics of Verification*, x.

<sup>79</sup> *Ibid.*, x and 1.

special meaning shall be given to [terms] if it is established that the parties so intend.”<sup>80</sup>

This provides the legal justification to reduce ambiguity on certain terminology.

Interestingly, American leaders view verification as increasing effective cooperation that deters cheating, detects violations, and reassures the public about mutual compliance.<sup>81</sup>

Even as post-Cold War relations improve, it is still important to reassure the public that the threat of nuclear war is no longer a realistic possibility.

Verification procedures are often the most extensive language in treaties because negotiators must balance effective verification with various costs including personnel, money and protecting sensitive technology.<sup>82</sup> The effectiveness of these procedures is assisted by a more open and trusting relationship between the USA and Russia.<sup>83</sup> Since perfect verification is impossible, there is a certain degree of trust necessary to make sure that verification is even moderately effective. This is especially true for more intrusive verification procedures like on-site inspections, permanent monitors, and cooperative measures. States need to have confidence that these measures will not result in intentional collection of certain intelligence gaps outside the scope of the treaty, even as there will be unintentional collection on various intelligence gaps, which is an accepted risk and one reason why verification continues with decreased tensions between the USA and Russia. These measures can provide the atmospherics of a situation, which include general relationships at the location, possible readiness or training levels, and whether there appears to be an effort to openly cheat on treaty provisions.

---

<sup>80</sup> *Vienna Convention*, 13.

<sup>81</sup> Gallagher, *The Politics of Verification*, 1.

<sup>82</sup> Lehman, “Verification in the Age of Glasnost,” 10.

<sup>83</sup> *Ibid.*, 3.

During the Cold War, cooperative measures meant different things to the USA and the Soviet Union.<sup>84</sup> The Reagan Administration viewed cooperative measures as separate and distinct elements in arms control whereas the Soviets thought cooperative measures should supplement NTM.<sup>85</sup> Reagan's desire to reduce nuclear weapons drove his view on cooperative measures and even today nuclear weapons reductions require a number of verification measures to reassure both sides that only minimal cheating is occurring. The Soviets did not believe that cooperative measures should supplant one's own capabilities for verification.<sup>86</sup> Cooperative measures cannot replace NTM and must actually work with NTM to provide for effective verification provisions. The Soviets and the Americans were both correct in their views because cooperative measures are essential to verification, but their benefit comes from combining them with NTM. For verification to work, states have to understand that the other state desires to cooperate, at least on some level, and that verification mitigates the need to cheat. Furthermore, cooperative measures only force states to show what they want, which also falls within specific treaty definitions and provisions, so it is easy to avoid showing other potential violations. Nations can simply hope that NTM or on-site inspections do not detect these violations.

Since the end of the Cold War, there is an entirely different problem with verification because the USA and Russia have relatively good relations. Although there are still areas of conflict, they no longer view each other as the ultimate global threat.

---

<sup>84</sup> James A. Schear, "Verifying Arms Agreements: Premises, Practices, and Future Problems," in *The Verification of Arms Control Agreements*, edited by Ian Bellany and Coit D. Blacker, Totowa: Frank Cass & Co. Ltd., 1983: 7.

<sup>85</sup> *Ibid.*, 9.

<sup>86</sup> *Ibid.*

This actually creates a dilemma for verification procedures. States find it difficult to justify paying for inspections and monitoring during periods of good relationships, but when relations sour there is the question of whether procedures negotiated during the better times are sufficient to detect cheating or malicious intent.<sup>87</sup> This highlights the importance of economics in verification processes because states finance them, but competing priorities may downgrade the focus on verification during times of increased trust.<sup>88</sup> Policymakers need to carefully balance competing priorities with the need to verify treaties in such a manner as to build confidence between treaty participants, give states valuable intelligence not available through NTM, and reduce the risk of miscalculation once tensions increase for any reason. It is clear that given the current American financial climate, future research should examine the impact of a constrained budget on verification procedures particularly for strategic nuclear arms control where failure could have disastrous consequences.

Within the USA, domestic politics plays an important role in treaty ratification, and verification usually takes center stage during these debates. These debates play out within the branches of government, as well as the press, and, from a public perspective, seem to overshadow the real issues of a treaty, like the number of nuclear warheads reduced or the prevention of a nuclear war between the USA and Russia.<sup>89</sup> This debate surfaced during the U.S. Senate Foreign Relation Committee's hearings on both SORT and New START, so it is clear that verification measures continue to provide an important element in any nuclear arms control treaty between the USA and Russia.

---

<sup>87</sup> Gallagher, *The Politics of Verification*, 2.

<sup>88</sup> O'Neill, *Verification in an Age of Insecurity*, 57.

<sup>89</sup> Lowenthal and Wit, "The Politics of Verification," 153-154.

Both domestic and international politics play a role in verification and nuclear arms control treaties. Politics create the treaty and verification provisions through bargaining, collaboration and negotiation, which means that neither Russia nor the USA get everything it wants into a treaty. Additionally, it is ultimately a political decision as to whether a treaty violation is enough to actually formally respond, and there are two main standards for this called strict constructionist and loose constructionist. The USA maintains a loose constructionist standard, viewing militarily significant cheating as a problem, which helps define acceptable verification measures based on the specific treaty requirements.

### *Cheating problems in arms control agreements*

At its core, verification is necessary because it deters cheating and builds confidence between treaty signatories that each side will follow the agreement. Both the Russians and Americans violate treaties at various times, but there is no longer any reason to fear deliberate cheating by either side because nuclear arms control treaties serve both sides' best interests. The Russians and Americans approach cheating differently in that the Russians follow the exact meaning of the treaty whereas the Americans tend to follow the intent of the treaty. These differences cause both sides to determine what constitutes cheating slightly differently. Verification protocols will identify and deter major cheating, but minor cheating is often accepted by both signatories.

One of the primary reasons that arms control agreements contain verification provisions is to deter cheating by both sides, which causes controversy for a variety of reasons. During the Reagan Administration, the anti-arms control proponents contended

that the Soviets cheated on previous agreements and would likely continue to cheat on future agreements.<sup>90</sup> During the New START ratification debates, opponents of the treaty brought up Russian cheating on START I as a reason to carefully consider New START's verification provisions. As previously noted, the problem with some of these discussions is that both sides have violations, but America's open society and public debates often highlight Russia's issues more than Russia highlights American issues. Even if Russia did publicly reveal America's violations, the American public might not necessarily believe the Russian and politicians might not openly acknowledge these violations. One of the major issues is what to do once a state detects a treaty violation because, as discussed earlier with nuclear arms control treaties, there is no enforcement mechanism short of nuclear war.<sup>91</sup> The Vienna Convention contains provisions that material breaches are grounds for withdrawal from a treaty, but it is the non-breaching party's choice on what exactly to do with regards to the violation.<sup>92</sup> States should carefully consider all the other benefits, both intended and not intended, of a treaty before making decisions about whether to withdraw from the treaty, suspend either part or all of the treaty, or do nothing. Furthermore, it is necessary to determine why the Russians or the Americans fail to comply with treaty requirements.

There are three competing views for why cheating occurred during the Cold War and some still apply today. Since the majority of literature examined Soviet examples of "cheating," this review will primarily focus on some of those violations. American

---

<sup>90</sup> Gary L. Guertner, "The Politics of Soviet Arms Control Compliance: Lessons of the Reagan Administration," in *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown, and William K. Cheek, McLean: Brassey's (US), Inc., 1992: 36.

<sup>91</sup> Mark M. Lowenthal, "The Politics of Verification: What's New, What's Not," in *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown, and William K. Cheek, McLean: Brassey's (US), Inc, 1992: 16.

<sup>92</sup> *Vienna Convention*, 16 and 20-21.

violations would likely have similar explanations. The first, and most troubling view, was that the Soviets/Russians deliberately cheated, which can lead to trust issues because part of signing a treaty is having confidence that the other party will abide by all the agreed provisions.<sup>93</sup> In the post-Cold War era, it is not in either the Russians' or the Americans' best interests to deliberately cheat on nuclear arms control treaties, so this explanation is no longer really valid. The second explanation is that bureaucratic interference with certain processes causes violations.<sup>94</sup> For example, the Reagan Administration accused the Soviets of violating the Antiballistic Missile Treaty because the Krasnoyarsk Radar was not built on the periphery of the Soviet Union, as the treaty required.<sup>95</sup> Gary Guertner explained this situation in terms of bureaucratic interference because the Ministry of Defense approved this radar in the 1960s, before the treaty was signed. If the Soviets built it closer to the periphery, they needed more than one facility to do the same job, and that was not cost effective. Furthermore, the Politburo approved the radar network in the 1970s, about the time the treaty was signed, but Defense Minister Ustinov did not inform the Politburo of a possible treaty violation.<sup>96</sup> The massive Soviet bureaucracy did not communicate effectively on past decisions, which affected the new treaty. The final explanation of Soviet/Russian cheating is that the signatories have a conflicting interpretation of the obligations under the treaty. The USA knows that the Soviets/Russians actively exploit treaty ambiguities, thus negotiations often take so long in order to try to limit as much ambiguity as possible.<sup>97</sup> A cultural

---

<sup>93</sup> Guertner, "The Politics of Soviet Arms Control Compliance," 36.

<sup>94</sup> Ibid.

<sup>95</sup> Ibid., 47.

<sup>96</sup> Ibid., 48.

<sup>97</sup> Ibid., 36 and 54.

difference partially explains these disagreements. Americans view these agreements as definitive whereas the Soviets/Russians do not, and thus press their limits to see how far they can go.<sup>98</sup> All of these explanations highlight the importance of Reagan's "trust but verify" approach to nuclear arms control because both Russia and the USA need to verify that unintentional treaty breaches do not occur.

The Americans and Russians also approach verification in different ways from a political perspective.<sup>99</sup> Interestingly, the Russians are strict constructionists when it comes to treaty interpretation, so terms and definitions are often immensely important to them.<sup>100</sup> They use these strict definitions to create ambiguity because if the treaty defines something very precisely then anything outside of that definition either is or is not a treaty requirement, depending on the case. In this way, the Russians do not follow the spirit of the treaty, but the letter of the treaty as written.

An American problem regarding cheating is that policymakers routinely ask too much of technical verification. NTM does not actually provide insight into an enemy's intentions. It can provide indications of what these intentions might be, but does nothing to help corroborate intentions. In the case of nuclear arms control verification protocols, NTM simply determines whether countries follow or violate the treaty provisions. During the Cold War, Soviet compliance was not examined objectively to determine what actually occurred and why it occurred because verification was so highly

---

<sup>98</sup> Walt W. Rosow, "Introductory Remarks," in *Intelligence and Arms Control: A Marriage of Convenience*, edited by Thomas J. Hirschfeld, Austin: The University of Texas, 1987: 3.

<sup>99</sup> Allan S. Krass, "The Soviet View of Verification," in *Verification and Arms Control*, edited by William C. Potter, Lexington: Lexington Books, 1985: 37.

<sup>100</sup> *Ibid.*, 38

politicized.<sup>101</sup> During the New START ratification debates, it is unclear if American policymakers made similar errors when highlighting Russia's violations of START I.

Part of the reason that arms control agreements are viable is because major cheating will likely be discovered and, once discovered, the other party's reaction destroys any advantage gained from cheating in the first place.<sup>102</sup> In the post-Cold War era, Russia and the USA essentially have parity when it comes to nuclear weapons, so major cheating that creates mistrust does not benefit either country. According to Richard Perle, Reagan's Assistant Secretary of Defense, there was actually a political problem with catching the Soviets cheating because the USA would have to choose between a crisis situation, possibly leading to nuclear war, or ignoring the evidence.<sup>103</sup> Perle explained that it was often necessary to find excuses to justify Soviet behavior rather than risk the political consequences of identifying cheating.<sup>104</sup> Perle's statements help to highlight that there is no enforcement mechanism for nuclear arms control treaties unless states are willing to risk nuclear war.

Both the USA and Russia accept a certain amount of cheating on nuclear arms control agreements as long as major violations do not occur. Verification regimes are structured to detect these major violations because minor violations are often the result of differing interpretations of treaty language and not an intentional effort to violate the treaty. Part of the reason that both the USA and Russia accept minor cheating is that there is no effective mechanism to enforce nuclear arms control treaties short of nuclear

---

<sup>101</sup> Ibid., 58.

<sup>102</sup> Bellany, "An Introduction to Verification," 1.

<sup>103</sup> Michael Krepon, "The Political Dynamics of Verification and Compliance Debates," in *Verification and Arms Control*, edited by William C. Potter, Lexington: Lexington Books, 1985: 144.

<sup>104</sup> Ibid.

war, which is not a viable option. Just as the Russians and Americans have differing views on treaty interpretation, they both also have different views on arms control in general.

### ***General Soviet/Russian views of arms control***

Not surprisingly, the Russians trace many of their general views on arms control and verification back to the Soviet Union. For Russia, arms control is useful to ensure parity with the USA and make incremental gains in relative capabilities. The Russians understand that nuclear weapons make them important in the international community and that strategic weapons no longer cause as much concern as tactical nuclear weapons. The Russians have a significant advantage in tactical weapons that are extremely difficult to include in treaties largely because extremely intrusive verification measures are needed to ensure compliance. The Russians also view missile defense systems as part of any strategic weapons negotiation and continue to object to the USA's missile defense plans. Although Russia usually insists on verification regimes within nuclear arms control treaties, it sometimes objects to certain provisions because it determines them to be too intrusive.

The Soviets used treaties to slow America's technological advancement and Russia essentially does the same thing.<sup>105</sup> Just maintaining nuclear weapons is expensive and producing new nuclear weapons is even more expensive. Russia seeks to offset some of these costs, and slowing the America's technological advancement is one method to

---

<sup>105</sup> Andrei Shoumikhin, "Change and Continuity in Russian Arms Control," *Comparative Strategy*, 2009: 140.

accomplish this goal.<sup>106</sup> These treaties also force the USA to reduce its nuclear arsenal, which maintains nuclear parity and increases Russia's sense of security with its own smaller nuclear stockpiles.<sup>107</sup>

The Soviets used disarmament as a way to make incremental gains and usually began negotiations by proposing initiatives that were completely unacceptable to the Americans.<sup>108</sup> Some level of provocation, up to nearly direct confrontation as in the Cuban Missile Crisis, was an important part of this strategy because it forced the Americans and the Soviets to deal with problems and not ignore them and assume they would go away.<sup>109</sup> Russia's increase in strategic military activity, particularly bomber and submarine patrols beginning in 2006-2007, highlights its continued attempt to use small provocations to keep Russia's nuclear capability on the minds of American policymakers and prevent these policymakers from ignoring Russia.

Boris Yeltsin wanted continued arms control to reduce Russian inventory while preserving Russia's global importance as an important player in international politics primarily based on its massive nuclear weapons stockpile.<sup>110</sup> Russia's ruling elite wanted to maintain parity with the USA because many of them had the Great Russia mentality that spoke of the importance of Russia in global affairs.<sup>111</sup> These elites thought that nuclear deterrence and Mutually Assured Destruction were the preferred foundation for security, so Russia's leaders should use this as the groundwork to posture within the international arena. Nuclear weapons are important because they keep Russia in a

---

<sup>106</sup> Brad McAllister, "Framing U.S.-Russian Security Cooperation: Neorealist and Neoliberal Alternatives to Navigating the New Security Terrain," *Demokratizatsiya*, 2007: 280.

<sup>107</sup> Steven Pifer, "After START: Hurdles Ahead," *Current History*, 2009: 304.

<sup>108</sup> Shoumikhin, "Change and Continuity," 143.

<sup>109</sup> *Ibid.*

<sup>110</sup> *Ibid.*, 148.

<sup>111</sup> *Ibid.*, 150.

superpower-like status and allow it to dictate certain terms within the international environment.<sup>112</sup> At the very least, nuclear weapons make it easier for Russia to advocate its national interests and stand up to American initiatives that counter some of these initiatives, like arms proliferation to certain countries.

The Russians continue to define the threat to their security using the East versus West mentality. Its strategic military doctrine, adopted February 2010, considers the USA and NATO fundamental threats to Russian military security.<sup>113</sup> At the same time, Russians understand that strategic arms reductions give them a significant nuclear advantage in Europe because they have more tactical nuclear warheads and no treaties currently cover these weapons.<sup>114</sup> Given the short distances in Europe, Russia can use the warheads to target capitals and leadership, which can have a strategic effect in any type of conflict. Although eliminating tactical nuclear warheads is overall important to the reduction of the total number of nuclear weapons, these warheads are extremely small which makes verification through NTM and even on-site inspections difficult. Without using extremely intrusive verification procedures, it is unlikely that states can develop adequate verification procedures to ensure reduction of these weapons in such a way that reassures the USA and NATO that reductions are happening. This reduces the incentive to attempt to negotiate a tactical nuclear warhead reduction treaty because such intrusive measures increase the risk to sensitive national security information.

One of the Soviet Union's, and now Russia's, main objections to nuclear arms control treaties had more to do with strategic defensive systems than offensive ones.

---

<sup>112</sup> McAllister, "Framing U.S.-Russian Security Cooperation," 280.

<sup>113</sup> Guido den Dekker, "A new START to begin with: recent developments in US-Russian strategic arms reductions," *Security and Human Rights*, 2010: 87.

<sup>114</sup> *Ibid.*, 88.

Mikhail Gorbachev was the first to proclaim the Soviets' view that the Anti-Ballistic Missile Treaty was key to strategic stability because a lack of defenses increased vulnerability. This vulnerability made retaliation important and caused both the Americans and the Soviets to consider nuclear weapons use and possible consequences carefully.<sup>115</sup> Even during the New START negotiations in 2009, Russia linked nuclear arms control efforts with the American proposed ballistic missile defense plan. The Russians issued a reservation<sup>116</sup> that any buildup of missile defense might force Russia to withdraw from the New START.<sup>117</sup> The Russians' position was that missile defense buildup was an "extraordinary event" and New START, under Article XIV, allowed either country to withdraw with only three months' notice.<sup>118</sup> Although international law usually requires twelve months' notice, since New START specifically spells out different procedures, this also becomes consistent with the law.<sup>119</sup> The Russian position on withdrawing from New START is probably just a hollow threat that allows Russia to continue to object to ballistic missile defense plans. With the implementation of New START verification procedures, Russia gains valuable intelligence on the USA's nuclear forces along with insight into training and other nuclear preparedness issues. Additionally, the treaty establishes procedures for addressing any concerns.

Examining verification provisions specifically, the Soviets did not think it made sense to disarm without establishing some type verification mechanism. They actually

---

<sup>115</sup> Shoumikhin, "Change and Continuity," 144-146.

<sup>116</sup> Per the Vienna Convention, a "reservation" is a unilateral statement made by a state to take out or modify certain treaty provisions in the application of those provisions to the specific state making the reservation. *Vienna Convention*, 3.

<sup>117</sup> den Dekker, "A new START," 89.

<sup>118</sup> *Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms*, Treaty Document, Washinton D.C.: U.S. Government Printing Office, 2010: 24, 194.

<sup>119</sup> *Vienna Convention*, 19.

considered it dangerous to consider this a possibility because verification's goal was to detect and deter cheating, especially during nuclear control reduction in the Cold War.<sup>120</sup> The Soviets were extremely concerned about the Americans using verifications for spying purposes and objected to certain procedures. For example, the Soviets viewed interception of communications as illegitimate for NTM, so they went to great lengths to encrypt those signals.<sup>121</sup> In terms of verification, communications provide invaluable insight into whether or not treaty violations occur because they can actually help show intent. Intelligence professionals consider these intercepts one of the more reliable forms of intelligence, especially when an adversary does not know which communications are vulnerable and which are not. It is unclear if the Russians continue to object to communications intercepts or if they find it useful for their own intelligence needs and do not object as much, if at all.

Although things have changed, the Russians continue to follow many of the same strategies that the Soviets used. This provides a certain level of predictability for negotiators, especially those with some good historical background knowledge. Russia will continue to use nuclear arms control treaties to maintain parity with the USA and continue to highlight Russia's global importance because of its nuclear weapons. Russia will also still object to missile defense plans and continue to stress the importance of verification provisions, even if it objects to certain measures on the grounds that these measures are more spying than actually related to verification.

### *General American view of arms control*

---

<sup>120</sup> Krass, "The Soviet View of Verification," 40.

<sup>121</sup> Ibid., 49.

Although American views towards arms control usually center on public debates for specific treaties, there are a few comments that pertain to all nuclear arms control treaties. The 1972 Jackson Amendment made the overly simplistic requirement that administrations not reduce American nuclear weapons below that of the Soviets. This amendment does not give administrations the flexibility to negotiate treaties on qualitative factors in nuclear weapons and instead relies on quantitative factors. The 1991 Nunn-Lugar Cooperative Threat Reduction (CTR) Program does just the opposite, and makes negotiating nuclear arms reduction treaties easier, including supplementing treaty verification protocols. Furthermore, American policymakers demand both a loose constructionist standard for treaty ratification and strict constructionist standard during public debates leading up to ratification.

The Jackson Amendment was adopted and highlighted the importance of nuclear parity in arms control because it urged President Nixon not to cut the American nuclear arsenal to limits inferior to that of the Soviet Union.<sup>122</sup> This amendment tied future administrations' hands when negotiating with the Soviets or Russians because they had to be particularly careful to maintain parity. This was an overly simplistic way to maintain parity because not all nuclear weapons are equally important when it comes to military capability or strategic implications. For example, submarine launched ballistic missiles are important because they are difficult to locate and target for a preemptive, or even a reactionary, strike. Land based systems, especially silo based, are relatively easy to attack, but it is easier to maintain permanent communications with these sites to ensure that timely launches are possible. The Jackson Amendment highlighted another problem

---

<sup>122</sup> McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years*, New York: Random House, Inc., 1988: 554.

with verification and arms control: it is easier to discuss simple counting rules with the American public than the complicated pros and cons of each particular weapons system.

Whereas the Jackson Amendment effectively tied administrations' hands for future negotiations, the Nunn-Lugar CTR Program actually helped future administrations by providing funding and expertise to help eliminate weapons of mass destruction.<sup>123</sup>

CTR makes it so that economic reasons are not a justification for Russia to refuse to reduce its nuclear weapons, although there is some indication that Russia no longer needs this financial assistance and does not think CTR is necessary.<sup>124</sup> This program helps to supplement arms control treaty verification provisions because the experts who are assisting Russia eliminate nuclear weapons can independently confirm destruction. Additionally, CTR seeks to increase transparency in nuclear agreements by making data more available, which works well with verification.<sup>125</sup> In conjunction with the other verification procedures, this increased transparency will further build confidence that treaty provisions are followed and should reduce the chance for miscalculation.

American policymakers also have some generalized beliefs regarding verification that relate to the political debates surrounding arms control. The American policymakers claim they only need adequate verification to detect militarily significant breeches, what became known as Reagan's loose constructionist standard, while they focus on

---

<sup>123</sup> American Security Project, *The Nunn-Lugar Cooperative Threat Reduction Program: Securing and Safeguarding Weapons of Mass Destruction*, <http://americansecurityproject.org/featured-items/2012/fact-sheet-the-nunn-lugar-cooperative-threat-reduction-program-securing-and-safeguarding-weapons-of-mass-destruction/> (accessed June 11, 2013).

<sup>124</sup> Justin Bresolin, *Fact Sheet: The Nunn-Lugar Cooperative Threat Reduction Program*, [http://armscontrolcenter.org/publications/factsheets/fact\\_sheet\\_the\\_cooperative\\_threat\\_reduction\\_program/](http://armscontrolcenter.org/publications/factsheets/fact_sheet_the_cooperative_threat_reduction_program/) (accessed June 3, 2013).

<sup>125</sup> *Ibid.*

verification's effectiveness to detect every treaty violation.<sup>126</sup> This causes problems from both an intelligence and political standpoint. From an intelligence standpoint, focusing on every treaty violation increases the demands on verification because analysts need to pay particular attention to every provision within the treaty. It is not acceptable to simply focus on major violations that are militarily significant for reporting purposes because intelligence analysts work for policymakers who use verification to meet their own political goals. This desire to detect every violation causes problems politically because opponents of a particular treaty can use these "violations" to attempt to withdraw from the treaty or prevent follow on treaties from active negotiation or ratification. Attempting to address every violation further complicates the already difficult task of negotiating verification measures because negotiators must directly link verification provisions with what is technically feasible from an intelligence collection, processing, exploitation and dissemination perspective.

If the Jackson Amendment made nuclear arms control treaty negotiation more difficult, then CTR not only made negotiations easier, but also provided help in verifying arms reductions outside of the established protocols. American policymakers make determining general American views toward nuclear arms control treaties difficult because they hold two different standards depending on where the treaty is in the ratification process. This makes the negotiators' job more difficult because they have to address concerns at both levels, while also making sure that all the verification requirements are technically feasible.

## **TREATY COMPARISON AND ANALYSIS**

---

<sup>126</sup> O'Neill, *Verification in an Age of Insecurity*, 19.

## ***START I***

After nearly ten years of negotiations, Presidents George H.W. Bush and Mikhail Gorbachev signed START I on July 31, 1991. Reagan was instrumental in getting this treaty negotiated because he shifted American policy from limiting nuclear weapons to a process of actually reducing nuclear arms. Reagan also understood that he needed to take a hardline stance to convince the Soviets to negotiate, and build his credentials domestically as a Cold Warrior so he could push his nuclear abolitionist goal with some level of credibility. Even with all of Reagan's drive to get this accomplished, it was Gorbachev's new look at American intentions and efforts to change the Soviet system that made him the perfect partner to get an arms reduction treaty signed. Reagan also established the USA's loose constructionist standard for verification because he was unwilling to let minor violations destroy the entire nuclear arms reduction framework. START I served as the basis for nuclear arms reduction verification between the two states for nearly twenty years because it consisted of a comprehensive set of measures that included NTM, on-site inspections, notifications, and cooperative measures. It was not until START I expired in 2009 that another verification regime was actually discussed to take its place.

Although referring to SALT II debates, *Time* published two articles in 1979 that highlighted that the loss of the Iranian listening posts made verifying nuclear arms control agreements more difficult, particularly determining accurate ranges of missile systems.<sup>127</sup> The Carter Administration argued that losing Iran did not end verification because NTM and other intelligence sources could still monitor the Soviet weapons

---

<sup>127</sup> "Preview of the SALT Debate: 'Killer Amendments' ahead?" *Time*, June 18, 1979: 18.

systems.<sup>128</sup> Although not directly related to START I, these articles provide some insight into the environment the Reagan Administration faced. The argument that the USA had lost some valuable intelligence sources occurred again after the expiration of START I. Once the USA and Russia became accustomed to certain verification provisions, these provisions became ever more important because they gave both sides a level of comfort that they worked and managed expectations about nuclear forces.

President Reagan actually saw SALT II as a fatally flawed treaty because it legitimized Soviet heavy missiles that could destroy all American ICBMs in a surprise attack.<sup>129</sup> Both domestic and Soviet critics accused Reagan of trying to kill the whole arms control process because he did nothing to revive SALT II, but instead he broke from past strategic nuclear arms control treaties and sought to reduce nuclear weapons instead of merely limiting them.<sup>130</sup> By seeking to reduce nuclear weapons, Reagan's decisions drove the creation of a more comprehensive verification regime that would ensure neither side significantly cheated.

Critics argued that the Reagan Administration did not initially have a strategic arms control position because it only knew that SALT II was flawed and had no ideas for an alternate agreement.<sup>131</sup> Although his administration might have been in turmoil, as not all agreed with him, there was never any doubt in Reagan's mind that his ultimate goal was the elimination of nuclear weapons. Reagan was actually a nuclear abolitionist and

---

<sup>128</sup> "Spies in the Sky: The Fate of SALT II may depend on `verification.'" *Time*, July 30, 1979: 30.

<sup>129</sup> Samuel P. Huntington, "The Defense Policy, 1981-1982," in *The Reagan Presidency: An Early Assessment*, edited by Fred I. Greenstein, Baltimore: The Johns Hopkins University Press, 1983: 96.

<sup>130</sup> Gaddis, John Lewis. *The Cold War: A New History*. New York: The Pentagon Press, 2005: 225.

<sup>131</sup> I.M. Destler, "The Evolution of Reagan Foreign Policy," in *The Reagan Presidency: An Early Assessment*, edited by Fred I. Greenstein, Baltimore: The Johns Hopkins University Press, 1983: 141.

understood that the only way to meet this goal with through gradual arms reductions that reassured both the Soviets and the American public that their respective security was not threatened.

Reagan articulated his view on nuclear weapons when he stated in 1980 there needed to be legitimate arms reduction, verifiable, or there would be an arms race that the Soviets could not win.<sup>132</sup> Reagan was telling the Soviet Union that the easy answer to help keep the peace was negotiating an arms reduction treaty or they would face the threat of even more nuclear weapons. During his Eureka College address just two years later, Reagan expanded on this theme and stated that the reduction of nuclear weapons to equal levels between the two countries would ultimately enhance security and reduce risks of war.<sup>133</sup> Reduction enhanced security and reduced the risk for war because both sides would have fewer nuclear warheads, which would cause each side to carefully weigh the risks of a nuclear attack. This caution might prevent miscalculations on either side during heightened tensions. Reagan's comments highlighted two important points. First, that parity between the USA and the Soviet Union was a requirement because it gave both governments the confidence that the sides were equal, from a nuclear weapons standpoint, and did not have reserve forces for possible follow on and secondary strikes. Second, reduced nuclear forces would prevent both sides from constantly having to build the next biggest and greatest nuclear weapon to combat the others' developments. The ultimate question, of course, remained how many nuclear weapons were required to

---

<sup>132</sup> Paul Lettow, *Ronald Reagan and his Quest to Abolish Nuclear Weapons*. New York: Random House Trade Paperbacks, 2005: 54.

<sup>133</sup> Stanley R. Sloan and Robert C. Gray, *Nuclear Strategy and Arms Control*, New York: Foreign Policy Association, Inc., 1982: 59.

ensure peace, especially with weapons that virtually no one believed had a practical use during a war.

As previously mentioned, a treaty that reduces nuclear weapons must also contain applicable verification provisions, and the Reagan Administration debated various measures within SALT II for their use within START I negotiations. Admiral Bobby Inman, Deputy Director Central Intelligence, argued that SALT II was not all bad because it contained some provisions that actually made verification easier.<sup>134</sup> SALT II warhead counting rules treated every missile as if it contained the maximum number of warheads tested. This provision was good in the sense that it simplified counting procedures by counting each system at some maximum number of warheads. The problem with these rules was that if the Soviets or Americans decided not to deploy the missile with the maximum number of warheads, the treaty still viewed them as loaded to these maximum levels. This reduced the flexibility on both sides and could cause deployment of nuclear warheads based on treaty provisions rather than sound military strategy. Nevertheless, the Soviets and the Americans sought nuclear parity, so deployment of missiles in a manner attributed to the treaty made sense to keep this parity. Verification was a crucial element to this counting rule and periodic on-site inspections ensured that neither side cheated and placed more warheads on a weapons system. On-site inspections are the only way to count nuclear warheads because NTM is incapable of providing this level of detail.

In order to enact a nuclear weapons reduction plan, the USA realized that on-site inspections were necessary to verify various parts associated with nuclear weapons

---

<sup>134</sup> Strobe Talbott, *Deadly Gambits: The Reagan Administration and the Stalemate in Nuclear Arms Control*, New York: Alfred A. Knopf, Inc., 1984: 274.

including production and storage.<sup>135</sup> Inspections allowed both the Soviets and the Americans to determine that production centers did not develop more weapons than allowed by the treaties and that storage areas declared the correct number of nuclear weapons. These are precisely the types of activities that NTM cannot readily verify because they occur inside and imagery can only tell what happens at a specific moment with an unobstructed view. On-site inspections can last hours or even days to better determine exactly what happens at a site; NTM does, however, complement on-site inspections. Tasking NTM before and after inspections will aid in determining whether suspicious activity occurs prior to or after an inspection, an indication of cheating. During the debate, Inman cautioned that on-site inspections were not a guarantee against cheating, which reiterated to everyone the impossibility of developing a perfect verification regime because verification relies on intelligence sources and limited resources to identify cheating.<sup>136</sup> Reagan concluded that some verification measures were better than nothing, but he needed to assure the Senate, and American public, that the Soviets' opportunity to cheat was limited and that the USA would detect cheating before it reached a militarily significant level.<sup>137</sup> The argument that some verification measures were better than nothing resurfaced during the New START debates in 2010 because the USA and Russia did not have active verification procedures in place after START I's expiration.

The verification debate addressed cooperative measures in that both the Soviets and the Americans needed to declare where their inventories were located. This was

---

<sup>135</sup> Ibid., 288.

<sup>136</sup> Ibid., 289.

<sup>137</sup> Ibid., 292.

primarily so inspectors could examine anything that might look suspicious at these facilities.<sup>138</sup> NTM can also examine each of these facilities during times when inspectors are not at them to monitor any other suspicious activities. Cooperative measures require a certain amount of trust between the participants because declaring facilities also makes them vulnerable to attack. Since this becomes a mutual vulnerability, both sides understand that it is not in its best interest to target these facilities, as swift retaliation is likely. Each side also knows that discovery of any undeclared facilities through various intelligence sources can erode trust and confidence for the treaty and might destroy any hope for follow on negotiations.

START I contained other cooperative measures that aided verification while protecting both sides against unacknowledged espionage activities.<sup>139</sup> These procedures included telemetry<sup>140</sup> exchange that reduced the risks associated with only relying on NTM.<sup>141</sup> Although NTM is capable, adversaries can easily deceive it and there is a finite amount of resources to collect on various intelligence problems throughout the world. By exchanging telemetry, both sides could feel more comfortable in their ability to detect cheating, which increases comfort and prevents miscalculation based on ambiguous intelligence.

Although Reagan's ultimate goal was nuclear weapons elimination, he understood that this was impossible unless he first demonstrated that he was a cold warrior and tough

---

<sup>138</sup> Ibid., 290.

<sup>139</sup> Sidney D. Drell, "Verification Triumphs," *The Bulletin of the Atomic Scientists*, November 1991: 28.

<sup>140</sup> Telemetry is essentially signals during a missile flight test that gives information on fuel load, missile functioning, warhead functioning, any problems during tests and a variety of other things. By providing this data, either the Americans or the Soviets, or Russians, could easily verify that missiles met treaty requirements and could use this to verify what NTM discovered during the actual test. It helps prevent some deception efforts against NTM.

<sup>141</sup> Ibid.

on communism. Reagan increased defense spending and built up various arms to put pressure on the Soviet Union, in addition to reaffirming his tough anti-communist stance.<sup>142</sup> Reagan developed a more robust command, control, communications and intelligence system for nuclear weapons along with procuring more bombers and SLBMs.<sup>143</sup> Although Reagan intended the Strategic Defense Initiative (SDI) to make nuclear weapons “impotent and obsolete,” it frightened the Soviet leaders because they were not sure they could compete with this type of technology.<sup>144</sup> Reagan refused to bargain with SDI, so even though the Soviets did not like SDI, they could not prevent the USA from using it.<sup>145</sup> Eventually the Soviets understood that nuclear weapons reduction with an impressive verification regime overshadowed their desire to prevent the USA from building SDI. Reagan also understood that once one built military strength, it became easier to negotiate and this was precisely what he did.<sup>146</sup>

As previously noted, the arms buildup during the Reagan Administration helped convince the Soviets of the need to negotiate to stabilize the nuclear situation, but this was only possible when a capable Soviet leader was willing to negotiate. Reagan noted in a letter from Leonid Brezhnev that he thought the USA was incapable of dealing with Brezhnev constructively on arms control, or really anything else for that matter.<sup>147</sup> Reagan attempted to reach out to Yuri Andropov and wrote a letter that argued for the need to develop an agreement of a mutual, verifiable reduction regime, then eventually

---

<sup>142</sup> Gaddis, *The United States and the End of the Cold War*, 121.

<sup>143</sup> Samuel P. Huntington, "The Defense Policy, 1981-1982," 98.

<sup>144</sup> Gaddis, *The Cold War*, 226-227.

<sup>145</sup> Ibid.

<sup>146</sup> Gaddis, *The United States and the End of the Cold War*, 125.

<sup>147</sup> Lettow, *Ronald Reagan and his Quest*, 72.

eliminate all nuclear weapons.<sup>148</sup> Andropov's response made no mention of eliminating all nuclear weapons and, although he acknowledged the possibility of arms reductions, he expressed concern over the USA's military buildup. He also expressed the need for the Soviet Union to match this buildup, to "preserve the military and strategic equilibrium."<sup>149</sup> Throughout 1984 Presidents Reagan and Konstantin Chernenko exchanged letters on a variety of topics including nuclear arms control. Reagan mentioned nuclear arms control in many of these letters, but did not make explicit references to a verifiable treaty or the ultimate goal of a nuclear weapons free world. Chernenko continued to reiterate Andropov's stance over the American military buildup.<sup>150</sup> In the end, Gorbachev was the Soviet leader with whom Reagan was able to negotiate various treaties, including START I with its significant verification procedures.

Since Gorbachev did not have any background with foreign affairs, he wanted to develop his own understanding of American intentions through direct observation rather than relying on others' observations and beliefs.<sup>151</sup> Additionally, Gorbachev instituted the policies of *glasnost*, or openness, and *perestroika*, or restructuring at home, which allowed for easier acceptance of Reagan's proposals. *Glasnost* in particular made intrusive verification protocols more acceptable because there was less censorship and more information already available through public means. *Perestroika* helped to increase the USA's trust of the Soviet Union by its attempt to fix some of the underlying political

---

<sup>148</sup> Ibid., 133.

<sup>149</sup> Yuri Andropov, *The Reagan Files*, January 28, 1984, <http://jasonebin.com/thereaganfiles/id28.html> (accessed May 3, 2013).

<sup>150</sup> Ronald Reagan and Konstantin Chernenko, *The Reagan Files*, 1984, <http://www.thereaganfiles.com/letters-between-president.html> (accessed May 3, 2013).

<sup>151</sup> Daniel Deudney and G. John Ikenberry, "Who Won the Cold War?" in *Foreign Policy*, Summer 1992, <https://login.cuhsl.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9206222892&site=ehost-live> (accessed April 4, 2013).

and economic problems within the Soviet system and demonstrated Gorbachev's willingness to change. This willingness, plus Margaret Thatcher's confidence in Gorbachev's sincerity for change, helped convince Reagan and the Americans that nuclear arms reduction might be possible, especially when combined with a robust verification regime. Reagan's belief in abolishing nuclear weapons convinced Gorbachev that it might be possible to work with the USA to reduce nuclear weapons rather than continue to accelerate weapons production policies his predecessors put in place.<sup>152</sup> Without Gorbachev's decision to change the Soviet Union's response to Western initiatives, it was unlikely that Reagan's policies alone would have forced negotiations with the Soviets. The convergence of both Reagan and Gorbachev during a critical time in the Cold War made START I talks productive and led to the treaty designed to reduce nuclear weapons instead of merely limiting their deployment.

In the USA, START I ratification debates centered around whether verification adequately detected violations and what standard to use for examining these violations. The Soviet discussion on START I also likely expressed concern over verification and detecting cheating, but the Soviets probably classified this information and it might remain so today. As previously noted about the domestic policy debates, the Reagan Administration argued for a loose constructionist approach because cheating will occur for a variety of reasons and only militarily significant findings matter strategically.<sup>153</sup> Reagan understood that small amounts of cheating were unimportant, especially because, both the Soviets and the Americans cheated. Reagan's loose construction verification

---

<sup>152</sup> Ibid.

<sup>153</sup> Maria R. Alongi, "Verification and Congress: What Role for Politics?" in *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown, and William K. Cheek, McLean: Brassey's (US), Inc., 1992: 27.

standard is still used by the U.S. Senate to determine if a treaty is effectively verifiable. Reagan also established the principle of “trust, but verify” for nuclear arms control treaties. Noted earlier, there needs to be a certain amount of trust between states in order to even attempt nuclear arms reductions and establish some intrusive verification measures to reassure all involved that no significant cheating is occurring.

Reagan’s ultimate goal was to reduce nuclear weapons and he refused to let minor treaty violations prevent him from making these reductions happen. This view shaped both the political and intelligence implications of the verification regime. It reduced the burden on the intelligence community to detect and report every minor treaty violation, while it allowed politicians to proclaim that the Soviets could not violate the treaty in any meaningful way. As with any intrusive verification regime, Congress had to determine whether verification compromised America’s sensitive information or industrial practices associated with nuclear weapons.<sup>154</sup> The Soviets likely had to make a similar decision. The central question with START I, in terms of verification, was whether the Americans and the Soviets agreed on verification procedures capable of building confidence that cheating would not be substantial enough to risk their country’s survival.

It is important to examine certain provisions of the treaty itself to determine exactly how they aided the verification process. Since START I served as the basis for nuclear arms reduction verification processes until New START, it is imperative to establish baseline knowledge of these provisions. Tracking mobile weapons systems, of any type, provides a unique challenge to intelligence resources, both the analysts and the collection platforms. START I restricted both road- and rail-mobile ICBM launchers to

---

<sup>154</sup> Ibid., 29.

certain areas. This included limiting exercise deployment areas based on the system's permanent basing locations.<sup>155</sup> By restricting mobile launchers to certain locations, the Americans and Soviets could more easily locate these systems and ensure they complied with treaty provisions. Since these launchers are so difficult to locate, if intelligence analysts happened to locate them outside of an approved deployment area, these analysts could examine other intelligence indicators to determine if a surprise attack was imminent or if it was only an exercise that violated some of the treaty's provisions. This is especially important during a crisis because moving mobile systems to ensure their survivability is likely one of the first steps before an actual conflict. These procedures at least provided a method to diffuse a situation before nuclear war actually occurred.

Road-mobile launchers are even more mobile than rail-mobile launchers, so START I required that each launcher have a unique identifier to aide NTM in verification.<sup>156</sup> This prevented the Soviets or Americans from moving these systems around and confusing verification processes that included counting the number of launchers to ensure they were below the numerical limits imposed by the treaty. Along similar lines, the treaty required that mobile space launchers and space boost vehicles have recognizable differences that NTM could verify.<sup>157</sup> This prevented confusion in identifying nuclear weapons launches from peaceful space launches and further reduced the chance of miscalculation.

---

<sup>155</sup> *U.S. Department of State - Hypertext of START I Treaty*, July 31, 1991, <http://www.state.gov/www/global/arms/starthtm/start/start1.html> (accessed February 16, 2013).

<sup>156</sup> *Ibid.*

<sup>157</sup> *U.S. Department of State - Agreed Statements*, <http://www.state.gov/www/global/arms/starthtm/start/agreed.html> (accessed February 16, 2013).

NTM played a crucial role in START I verification and there were several items within the treaty that specifically addressed its use. Each party could use NTM at its disposal consistent with international law.<sup>158</sup> This reiterated that international law allowed satellites to overfly countries and the Soviets and Americans used these same assets for verification without fear of reprisal. Furthermore, neither side could interfere with NTM nor practice concealment measures to impede its function except for specific exceptions at ICBM bases and deployment area.<sup>159</sup> These exemptions mostly related to housing mobile ICBMs within a shelter or practicing concealment during an exercise deployment. The ban on impeding NTM prevented both the USA and the Soviet Union from deliberately seeking to deceive the other, which reduced the possibility of miscalculation due to incomplete, or misleading, information. Furthermore, either side could verify new weapons designs because START I required the front section of each weapons system be verifiable by NTM.<sup>160</sup> This meant that there had to be a physical and observable difference between designs to prevent either the Soviets or the Americans from developing a new weapons system that looked the same as an old system. A similar weapons system might confuse counting rules or even skirt the rules on numerical limitations.

Other cooperative measures combined with notification procedures and NTM increased the effectiveness of START I's verification regime. The USA and Soviet Union were required to display in the open their mobile ICBMs, heavy bombers, and

---

<sup>158</sup> *U.S. Department of State - Hypertext of START I Treaty.*

<sup>159</sup> *Ibid.*

<sup>160</sup> *U.S. Department of State - Agreed Statements.*

former heavy bombers once officially notified by the other country.<sup>161</sup> This allowed the ability for NTM to verify any irregularities at a particular facility or location and provided a clear, unobstructed view of the various weapons systems. Similar cooperative measures existed for the elimination of nuclear weapons or destruction of silos wherein they must remain visible for the entire elimination and even remain out in the open for up to 90 days to ensure proper destruction.<sup>162</sup> This allowed the USA and Soviet Union to verify destruction and ensure that neither country could easily reconstitute these weapons and place them back into the force. Furthermore, the length of time allowed the intelligence community to work collection into some sort of cycle and still focus on other emerging or priority issues instead of only serving a verification role. This helped both the USA and Soviet Union to manage their limited NTM assets and use them for a variety of missions related to national security, not just nuclear weapons.

An entire notification section provided in-depth guidance on timelines, procedures, and what specifically required notification. Of note, the section included notification procedures for missile launches, movement of equipment, and destruction of equipment.<sup>163</sup> These measures were key pieces in verification because notification allowed intelligence analysts to anticipate planned activities and then determine what actually occurred. Verifying these activities increased confidence between both the Soviets and Americans that there was a level of honesty concerning nuclear weapons. Furthermore, it reduced the risk of miscalculation because START I required notification

---

<sup>161</sup> *U.S. Department of State - Hypertext of START I Treaty.*

<sup>162</sup> *U.S. Department of State - Conversion or Elimination Protocol.* July 31, 1991.  
<http://www.state.gov/www/global/arms/starhtml/start/convpro.html> (accessed February 16, 2013).

<sup>163</sup> *U.S. Department of State - Notification Protocol.* July 31, 1991.  
<http://www.state.gov/www/global/arms/starhtml/start/notfypro.html> (accessed February 16, 2013).

for routine training and exercises, so tensions were reduced because intelligence indicators of a surprise attack could be correlated with START I notifications. If notification was not received, there was the ability to officially make inquiries about this deployment and possibly devote more NTM resources to determine what occurred before reacting and increasing military readiness.

The treaty required the Soviets and Americans to broadcast telemetric data during missile testing. It also prevented either side from engaging in any activity to deny full access to the data, to include “encryption, jamming, broadcasting using narrow directional beaming and encapsulating information.”<sup>164</sup> Furthermore, both sides had to provide tapes for all telemetry data to the other side, which analysts could use to determine the weapons system’s capabilities.

The final significant verification provision dealt with on-site inspections and continuous monitoring activities. These protocols defined each party’s right to conduct everything from baseline inspections and reentry vehicle inspections to inspections of facilities formerly used for nuclear weapons.<sup>165</sup> This allowed both the Soviets and Americans to walk around in an area and determine that there were no decoy systems or some other deception tactic that could fool NTM, but would not deceive inspectors. This consistent interaction between the Soviet Union and the USA helped each side to understand the other and provided an informal mechanism to address concerns and provide insight into certain practices that might prevent miscalculation during increased tension. Interestingly, since notifications were required for on-site inspections, it actually increased the chance of cheating because the USA or the Soviet Union could hide

---

<sup>164</sup> *U.S. Department of State - Hypertext of START I Treaty.*

<sup>165</sup> *Ibid.*

anything that violated the treaty before the inspectors arrived.<sup>166</sup> But NTM could mitigate this by verifying that nothing suspicious occurred prior to, or after, an actual inspection.

A related item within the treaty was the ability to conduct continuous monitoring activities at ICBM production facilities. This helped prevent production of new weapons systems because these portal monitors, as they are known, could conduct a variety of inspections on shipments to determine what the shipments contained. Since this was a continuous monitoring system, it prevented either the Soviets or Americans from timing production deliveries outside of on-site inspection windows, which required prior notification. Continuous monitoring not only enhanced verification, it reinforced the need to maintain parity between the Soviet Union and the USA and highlighted the need to pay particular attention to new technology when it dealt with nuclear weapons that could cause such devastation.

On-site inspections and monitoring activities were essential to verification because not only did they allow someone to inspect items visually, they allowed inspectors to observe intangible items like troop morale or assess the overall upkeep of a facility. Even if the inspectors' primary job was not to observe these activities, through the Foreign Military Intelligence Collection Activities (FORMICA) program inspectors could note these items during their routine duties and report them once they returned. These reports provided considerable reassurance to both sides that things were relatively peaceful and further reduced the possibility of miscalculations because they provided more in-depth knowledge of overall nuclear preparedness.

---

<sup>166</sup> *U.S. Department of State - Notification Protocol.*

START I's Inspection Protocol explicitly stated that inspections could not occur at the same time that cooperative measures were in place.<sup>167</sup> This restriction was important because it prevented inspectors from viewing something not easily recognizable by NTM, but which they could identify with relative ease. This highlighted the need to balance the desire for verification with the need to protect sensitive information that could compromise national security. Certain verification measures can compromise items more readily than others, depending on the inherent strengths and weaknesses of each source.

There were extensive procedures that defined everything from the diplomatic status of the inspectors to what could and could not occur during an inspection.<sup>168</sup> In addition to the Inspection Protocol there were fifteen annexes that described, in detail, exact procedures for how to perform inspections to prevent inappropriate collection activities or cause conflict with the host country.<sup>169</sup> Furthermore, both sides understood that even with these extensive definitions, it was virtually impossible to define every conceivable scenario, so they developed a processes that could adjust START I through the Joint Compliance and Inspection Commission. This allowed not only a mechanism for adjusting inspections, but also adjudicating disagreements through a formal process without simply accusing the other side of cheating and not fully understanding what actually occurred.

---

<sup>167</sup> *U.S. Department of State - Inspection Protocol*. July 31, 1991.  
<http://www.state.gov/www/global/arms/starthtm/start/insppro.html> (accessed February 16, 2013).

<sup>168</sup> *Ibid.*

<sup>169</sup> *U.S. Department of State - Inspections Annexes*.  
<http://www.state.gov/www/global/arms/starthtm/start/inannex.html> (accessed February 16, 2013).

With such detailed provisions for verification, it is not surprising that this treaty took so long to negotiate. This was especially true during the Cold War when the Soviet Union and the USA did not trust one another and both Presidents Reagan and Gorbachev had to convince their own countries that this treaty was worthwhile and important. Since START I reduced, rather than merely limited, nuclear weapons, in-depth verification provisions and procedures were necessary to instill confidence in both parties that cheating would not take place. These procedures reduced the risk of miscalculation that could lead to a nuclear war by removing some of the ambiguity associated with intelligence collection. The extensive nature of these provisions allowed both sides to rely on them for future nuclear arms control treaties until START I expired on December 5, 2009.

### ***START II***

START II took considerably less time to negotiate because it was primarily a follow on treaty to START I and not a completely different nuclear arms control treaty. This process culminated when Presidents George H.W. Bush and Boris Yeltsin signed the agreement on January 3, 1993. The negotiation timeline also reflected the changing international environment as the Soviet Union had collapsed, which opened the possibility for less hostile relations between the USA and Russia. Although this treaty was technically the first nuclear weapons treaty signed in the post-Cold War era, it relied on Cold War ideas and both the USA and Russia were not completely certain that hostilities would not resume in the future. This treaty contained various new provisions, but very little in the way of verification changed, and it continued to rely on START I's protocols.

During the treaty signing ceremony, both Bush and Yeltsin made comments that provided perspective on this treaty. Yeltsin indicated that the treaty was between two friendly states.<sup>170</sup> He further stated that Russia was an equal partner with the USA, which highlighted that Russia considered itself still important in the international arena even though the Soviet Union had collapsed and the Cold War ended. This statement also indicated that the USA and Russia should work together as equal partners within the international environment. Furthermore, by making this statement at the conclusion of a nuclear arms control treaty, it made it clear that Russia's continued importance in the international environment resulted from its nuclear weapons, if nothing else. President G.H.W. Bush's remarks noted the need for cooperation and trust in the future, but stopped short of stating that the Russians were the Americans' equals. Yet he echoed Yeltsin, saying the treaty demonstrated that the USA-Russia relationship had moved from adversarial to friendship.<sup>171</sup> Bush understood that the relationship had changed and indicated that the Russians no longer held Superpower status.

START II specifically stated that it used START I's verification procedures for its implementation.<sup>172</sup> It also added a few other specific measures that made verification easier. These included a provision that required heavy bombers used in a conventional role to have differences observable to both NTM and inspectors. This meant that there needed to be physically observable differences between a conventional and nuclear heavy bomber. The need for these differences also meant that if a bomber converted back to a

---

<sup>170</sup> U.S. Department of State Dispatch, *US and Russia Sign START II Treaty*, January 11, 1993, <https://login.cuhsl.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9302030340&site=ehost-live> (accessed October 2, 2012).

<sup>171</sup> Ibid.

<sup>172</sup> U.S. Department of State - *START II Treaty*, January 3, 1993. <http://www.state.gov/www/global/arms/starthtm/start2/str2txt.html> (accessed February 17, 2013).

nuclear role it could no longer have these physical characteristics. This made it so that the USA or Russia could not easily convert bombers from one type to another because it required physical differences. It necessitated careful planning to determine the correct mix of conventional and nuclear bombers to meet a specific national security strategy. The treaty also added procedures for SS-18 silo conversation observation and missile elimination procedures, and required exhibitions and inspections of heavy bombers to confirm weapons loads.<sup>173</sup>

In terms of strategic nuclear arms control, START II did not drastically reduce nuclear weapons and simply continued START I measures into the future. The same was true for verification because it applied the same extensive verification measures and only added a few modest provisions to help with some specific instances that likely needed clarification. During the treaty signing ceremony, both the USA and Russia highlighted that a friendlier relationship existed between the two countries. Russia also used this ceremony to identify its continued importance in the international community, if for no other reason than it possessed nuclear weapons. It would be nearly ten years until Russia and the USA signed another nuclear arms control treaty. SORT was a drastic departure from previous treaties primarily because it never mentioned verification within the treaty itself.

### ***SORT***

On May 24, 2002, Presidents George W. Bush and Vladimir Putin signed SORT. This treaty required the USA and Russia to reduce their nuclear arsenal to between 1,700

---

<sup>173</sup> U.S. Department of State Dispatch, *START II Treaty*, January 4, 1993, <https://login.cuhsl.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9302030286&site=ehost-live> (accessed October 2, 2012).

and 2,200 operationally deployed warheads by its effective date of December 31, 2012.<sup>174</sup> SORT relied on cooperation between the USA and Russia and was essentially two unilateral declarations rather than an actual treaty largely because it lacked a verification regime, adjudication mechanism, and expired on its effective date. With no adjudication mechanism and an effective period consisting of a matter of hours, treaty proponents argued that verification was useless and frustrating to include. SORT was also extremely flexible and did break out of the Cold War style of nuclear arms control to give the USA and Russia the freedom to determine their own nuclear force structure. Some of these same SORT supporters argued that although START I verification provisions were not part of SORT, these verification provisions provided some level of insight into nuclear force operations. By referring to START I verification as *de facto* SORT verification, these same backers acknowledged that there is more to verification than simply ensuring cheating does not occur. Although they did not outright acknowledge it, verification protocols help to reduce miscalculations and increase trust between Russia and the USA through continued contact.

SORT, also known as the Moscow Treaty, committed both sides to strengthening their relationship through “cooperation and friendship,” although it failed to define what friendship meant between the two countries.<sup>175</sup> Furthermore, it required building a new qualitative foundation for strategic relations, but failed to define what this “qualitative foundation” actually was or looked like.<sup>176</sup> This treaty provision indicated that Russia and the USA needed to develop a strategic relationship that extended beyond Cold War

---

<sup>174</sup> Strategic Offensive Reductions Treaty (SORT)." *Arms Control Association*. May 24, 2002. <http://www.armscontrol.org/documents/sort> (accessed February 16, 2013).

<sup>175</sup> *Ibid.*

<sup>176</sup> *Ibid.*

concerns, which was interesting for a strategic nuclear arms reduction treaty because it highlighted that treaty negotiations also opened dialogue on a number of issues, even if through unofficial channels. This was in contrast to the Cold War when nuclear weapons were the overarching concern and influenced nearly everything that the Soviet Union and the USA did.

SORT reaffirmed obligations under START I, and the USA and Russia agreed that START I remained in force according to its own terms, but did not further expand on this provision.<sup>177</sup> What is significant about this treaty provision is that it specifically maintained that START I was a separate and distinct treaty from SORT. The USA and Russia also did not indicate that START I's verification procedures would serve SORT, unlike START II's provision. As already noted, SORT contained no explicit verification protocols within the treaty itself. Under the spirit of "cooperation and friendship," the implication was that verification was not necessary and both sides could trust the other to maintain their commitments. Yet, the sheer power of nuclear weapons, and the fact that miscalculation can have such disastrous effects, makes verification important regardless of the relationship between the USA and Russia. This shift away from signing a treaty with a specific verification regime caused considerable debate during ratification that continued after START I expired on December 5, 2009.

SORT had several problems including that it more closely resembled two unilateral declarations than an easily recognizable international treaty that clearly defined ambiguous terms and concepts as required by international law.<sup>178</sup> As previously noted, some ambiguity is acceptable in these treaties, but SORT defined very little. The

---

<sup>177</sup> Ibid.

<sup>178</sup> *Vienna Convention*, 13.

Russians actually demanded a formal treaty that legally reinforced both states' decision to unilaterally reduce their nuclear arsenals and prevented the USA from backing out of reductions later.<sup>179</sup> However, the treaty contained no adjudication mechanism that forced the USA and Russia to address any violations in a forum between representatives from each respective country. SORT was extremely vague and required modest reductions from the USA whereas Russia had already met its obligations before the treaty's completion.<sup>180</sup> Unlike previous treaties, it listed no expiration date, so it expired on December 31, 2012, the same date it went into effect. However, it was still signed to ease Russia's concern over the fact that it had already reduced its nuclear weapons and it forced the USA to make similar cuts.<sup>181</sup> This meant that either the USA or Russia could meet the treaty's warhead limitations one moment and then actually begin operationally deploying more warheads a moment later. Since there was no longer a constant threat of nuclear war between Russia and the USA, this was probably an unrealistic criticism of the treaty because it is unlikely that either Russia or the USA has the economic resources to do this without considerable prior planning. The criticism does highlight, however, that treaties need to go into effect for some length of time to ensure the situation stabilizes and that both sides abide by the treaty's provisions for some length of time. It is unclear the length of time needed for this to happen.

Even with its omissions and expiration date, SORT provided both security and flexibility to the USA, and by default to Russia.<sup>182</sup> The USA and Russia could determine

---

<sup>179</sup> den Dekker, "A new START," 84.

<sup>180</sup> McAllister, "Framing U.S.-Russian Security Cooperation," 287.

<sup>181</sup> Christopher Paine, "The Moscow Treaty: Making matters worse," *Bulletin of Atomic Scientists*, November/December 2002: 19.

<sup>182</sup> John R. Bolton, "A Treaty for Utopia," *National Review*, May 3, 2010: 33.

an appropriate mix of nuclear weapons that met their particular national security strategy without concern about violating treaty obligations. This meant that either side could decide to remove a particular weapons category and build up another category to meet a specific requirement that did not exist during the Cold War. This allowed both sides to tailor their nuclear arsenal for specific, present day, security concerns. Although START I's verification procedures were not specifically required by SORT, their existence, combined with SORT's flexibility in force structure, was why neither the USA nor Russia felt new measures were necessary.<sup>183</sup> Since SORT was so flexible, it made verification nearly impossible because there was no limit to the combination of specific weapons types as long as the overall warhead count was below the maximum allowed. There were no notifications or other procedures that forced the USA or Russia to declare its intentions beforehand. For a treaty with such flexibility and such a short expiration timeline, negotiating extensive verification measures would have been a useless exercise, as would carrying out any of these measures.

Proponents of SORT attempted to address verification concerns in a number of ways to help ensure Senate ratification. Since there was no enforcement mechanism within SORT, verification was frustrating and useless because there was no method to adjudicate conflicts within the anarchical international system.<sup>184</sup> If there was a Joint Compliance and Inspection Commission, or some other organization to help resolve conflicts, verification might have been worth the effort. Moreover, it was a waste of resources to verify a treaty that expired the minute it went into effect. These arguments,

---

<sup>183</sup> Hearings before the Committee on Foreign Relations United States Senate, "Treaty on the Strategic Offensive Reduction: Moscow Treaty," Washington D.C.: U.S. Government Printing Office, 2002: 58.

<sup>184</sup> Ibid., 148.

however, largely ignored the second order effects of verification, which include a variety of intelligence collection methods to help reduce ambiguity and prevent miscalculations. There is also a certain level of comfort with verification regimes that few recognized their importance until they were absent. Once these measures were gone, the USA and Russia began to recognize all of the intangible effects of verification that could help with a number of issues, through informal discussions during on-site inspections and other nuclear verification events.

Proponents of SORT also argued that the lack of verification procedures freed up intelligence resources from the minutia of verification to focus on more serious issues.<sup>185</sup> Traditionally, verification took more time and effort because it required detailed counting and attention to specific treaty requirements to verify compliance whereas intelligence monitoring and collection only required one to determine that something was or was not happening and predict the enemy's future course of action. Given the rapid expansion of priorities for intelligence analysts in the post-Cold War era, this traditional view might no longer be applicable. There is an influx of information that makes it impossible for intelligence analysts to filter every piece of information to determine precisely what is occurring. Many intelligence analysts shifted from analyzing state behavior with governments, facilities, and equipment to locating single individuals with connections to terrorism or some other global problem. It is relatively easy to monitor Russian aircraft to determine if training increases or decreases, while tracking down Osama bin Laden required thousands of man-hours to find and fix his location before any military action was possible. This challenge is further complicated by adversaries who understand

---

<sup>185</sup> Ibid.

collection capabilities, use communication methods that are difficult to detect, and can blend into the local population with relative ease. The requirements for counterterrorism are so immense that providing intelligence support under a verification regime is actually less time consuming. Verification regimes require analysts to focus on Russia's nuclear weapons at very specific times, confirm notifications, and examine items during cooperative measures. These analysts can also request ad hoc NTM collection at random times to determine whether Russia violated the treaty provisions in any type of militarily significant way.

The G.W. Bush Administration had specific views that shaped the arms control process and resulted in a nuclear arms reduction treaty that consisted of two pages with no annexes or notable protocols.<sup>186</sup> This administration saw arms control as ponderous or counterproductive because it did not allow one to adjust provisions based on changing strategic conditions. In addition, the USA could not readily withdraw from treaties or revise them because it required greater domestic consensus and a variety of government organization to work together.<sup>187</sup> Often getting treaties ratified was difficult, and accepting changes might be nearly impossible, especially given the increasingly contentious domestic political environment in America. President G.W. Bush actually disdained the precedent of negotiating agreements with detailed requirements and intrusive verification procedures, which explained why SORT contained none of these.<sup>188</sup>

The G.W. Bush Administration was not opposed to arms control, but firmly understood

---

<sup>186</sup> Andrew Newman, "Arms Control, Proliferation and Terrorism: The Bush Administration's Post-September 11 Security Strategy," *The Journal of Strategic Studies*, 2004: 71.

<sup>187</sup> *Ibid.*, 59, 67.

<sup>188</sup> Cimbala, Stephen J. "US Strategic Nuclear Arms Control: Campaign Echoes and Obama's Options," *Defense & Security Analysis*, 2009: 176.

that cooperation could only occur if it advanced national interests first.<sup>189</sup> This was further articulation of Bush's desire to work with allies, but specifically reserving the right to unilateral actions if it was more in line with America's strategic priorities.

SORT contained no verification because it reflected Bush's belief that "[t]here is no longer the need to narrowly regulate every step we take, as did Cold War treaties founded on mutual suspicion and an adversarial relationship."<sup>190</sup> The problem with some of this administration's beliefs, however, was that it failed to recognize that Russia, and even the USA to a certain extent, might prefer verification provisions for a variety of reasons. The USA needed to reassure Russia that it would not attack and the various verification measures of past treaties provided a way to accomplish this. The same argument applied to the USA because although it probably did not lack intelligence capabilities like the Russians, verification provided a crucial supplement that clarified Russian actions and prevented miscalculations during times of increased tensions. Even with a relationship defined by "cooperation and friendship," verification provided both the USA and Russia with several available methods to determine that nuclear war was unlikely. The G.W. Bush Administration pushed SORT through to appease Russia's desire for a treaty and give the administration the ability to proclaim the importance of nuclear weapons reductions. However, both the G.W. Bush Administration's and Congress's primary national security focus was terrorism and not nuclear weapons reduction. Without this near constant focus on terrorist threats, it is unlikely that a

---

<sup>189</sup> Newman, "Arms Control, Proliferation and Terrorism," 60, 65.

<sup>190</sup> James P. Terry, "The 2002 Moscow Treaty: Marking a New Strategic Relationship Between the United States and Russia," *The Army Lawyer*, 2005: 7.

nuclear arms control treaty that lacked so many crucial provisions, most notably verification, would ever gain Senate approval again.

The hearing before the U.S. Senate Foreign Relations Committee provided some explanation into why verification was not included in SORT and explained why the Bush Administration felt it unnecessary to include it. This hearing was instructive because it defined what concerned both sides about verification in treaties in the post-Cold War world. Some of the same concerns came up during the New START ratification hearings, which further indicate the importance of these issues.

The G.W. Bush Administration argued that START I continued in force and served as a *de facto* verification regime for SORT.<sup>191</sup> These statements indicated that although the G.W. Bush Administration rejected the need for verification within SORT, it acknowledged the need for some type of verification because of the importance of reassuring everyone that nuclear war was not possible. Although provisions differed between the two treaties, this argument also highlighted that actually verifying specific elements of a treaty might not be the only goal of verification. START I's verification measures would add to the overall knowledge of the disposition of Russia's nuclear forces, even if it did nothing to ensure Russia met SORT's provisions. This increased confidence in Russia's intentions and decreased the risk of miscalculation leading to a nuclear attack.<sup>192</sup>

During SORT negotiations, even the Russians never proposed anything that would verify nuclear warhead reduction, in part, because no one would evade this treaty.

---

<sup>191</sup> Hearings before the Committee on Foreign Relations United States Senate, "Treaty on the Strategic Offensive Reduction: Moscow Treaty," 6.

<sup>192</sup> *Ibid.*, 17.

This was because each country had already decided to unilaterally reduce its nuclear weapons.<sup>193</sup> SORT codified these decisions in the form of a treaty and helped increase both sides' confidence that reductions would actually occur. SORT proponents argued that the USA could verify compliance without verification procedures through using intelligence resources, essentially alluding to the effectiveness of NTM.<sup>194</sup> As previously discussed, NTM could be deceived relatively easily and the combination of on-site inspections, cooperative measures, and notification processes provided clarification about nuclear activities and included a number of intangible benefits that did more than simply help to verify compliance for a particular treaty.

The three-year gap between START I's expiration in 2009 and SORT's effective date in 2012 concerned some Senators because there would be no verification measures during this time period.<sup>195</sup> Secretary of State Colin Powell's written response to the Senate Foreign Relations Committee's question indicated that the USA did not want to extend START I's verification provisions during this negotiation partly because the treaty expired in the future. He stated that the USA could gather information from START I and SORT to determine if verification was needed and actually make a decision at a future date.<sup>196</sup> He was essentially stating that the G.W. Bush Administration refused to make a decision because it was too far into the future. This is a typical American political maneuver whereby someone delays a decision for someone else. This delay partly laid the groundwork for START I's expiration and led the Obama Administration to start anew and negotiate New START on its own. The G.W. Bush Administration

---

<sup>193</sup> Ibid., 16, 79.

<sup>194</sup> Ibid., 148.

<sup>195</sup> Ibid., 24.

<sup>196</sup> Ibid., 60.

probably understood that, assuming reelection, it would not need to make a decision until the end of its second term, if at all.

Senators Richard Lugar and John Kerry, of the Senate Foreign Relations Committee, argued that START I's verification and inspection provisions helped with more than verifying Russia's strategic nuclear arms reductions. These inspections also helped determine what occurred at nuclear weapons storage sites and potentially helped expose sales of nuclear devices to terrorists, or at the very least deterred Russian guards from making these sales.<sup>197</sup> Furthermore, SORT only dealt with deployed nuclear weapons, and did not mention non-deployed nuclear warheads that could be stored anywhere. Without applicable verification measures, the inability to monitor non-deployed nuclear warheads was especially disturbing to these Senators. The problem with these concerns over non-deployed nuclear warheads, and actually stated by Secretary of Defense Donald Rumsfeld during his testimony, was that there is no way to verify what happens to Russia's nuclear warheads with any degree of accuracy.<sup>198</sup> Neither the USA nor Russia expressed any willingness to negotiate complex provisions to verify warhead dismantlement and storage, so it was not done for SORT.<sup>199</sup> It is unclear why the Russians, who normally demanded specific treaty language, chose not to do so in this case. It is possible that there was something at nuclear storage sites that Russia did not want the USA to discover. This could be something as nefarious as arms transfers or as simple as shoddy security practices that could lead to missing weapons.

---

<sup>197</sup> Ibid., 25, 27.

<sup>198</sup> Ibid., 86.

<sup>199</sup> Ibid., 53.

Rumsfeld's, Lugar's and Kerry's comments highlighted both traditional nuclear arms control concerns and new concerns after the September 11, 2001 terrorist attacks. As previously noted, verification will never be completely accurate because it relies on various intelligence sources that have certain degrees of vulnerability and inaccuracy, and a determined adversary can evade these methods with the right amount of knowledge. The USA and Russia negotiated this treaty less than a year after the horrific terrorist attack of 2001 and one of the greatest concerns was terrorist use of a weapon of mass destruction, which included nuclear weapons. The Senators expressed the desire to secure all nuclear weapons, including Russia's, regardless of how "friendly and cooperative" political relations were. Rumsfeld's response expressed the fact that treaty negotiation required both sides to agree to treaty provisions, and it was clear that securing non-deployed nuclear warheads was not an issue of agreement, or priority, during SORT negotiations. The Vienna Convention provides some exceptions to this rule, such as the ability to express reservations to certain provisions or the ability of a state to be bound by only a part of a treaty if all states involved agree.<sup>200</sup> In SORT's case, no one expressed a reservation and the treaty did not contain language to allow either the USA or Russia to be bound by only part of it.

Those concerned with SORT's lack of verification procedures argued that verification fostered trust, which was why they were necessary in treaties.<sup>201</sup> There is no legal reason to require verification protocols because treaties are binding and each signatory must execute its responsibilities in "good faith."<sup>202</sup> In the anarchical

---

<sup>200</sup> *Vienna Convention*, 7-8.

<sup>201</sup> *Ibid.*, 151.

<sup>202</sup> *Vienna Convention*, 11.

international system where nothing guarantees a country's security, trust is often difficult to attain, so verification provisions are absolutely required for certain treaties, and nuclear weapons treaties provide extra incentive to build trust to clear up any ambiguities that might result in a nuclear conflict. The counterargument was that the USA and Russia already trusted one another, so verification was unnecessary. This overly simplified the USA-Russia relationship because although both sides no longer had nuclear forces on alert status, this relationship was far from friendly. These former rivals continued to clash over various goals throughout the international arena, but after the end of the Cold War, and in part thanks to nuclear arms verification procedures, these clashes no longer caused concern about a possible nuclear war.

Chairman of the Joint Chiefs of Staff General Richard Myers's prepared statement said that SORT did not subject the USA to verification that could compromise some of its most sensitive military areas.<sup>203</sup> This statement seemed to indicate that the USA did not fully trust that the Russians would not attempt to exploit inspections of these areas. It seems logical that the Russians felt similarly about American efforts and could explain their lack of insistence on a SORT-specific verification regime. This concern is really just normal concern over any verification regime; negotiators must carefully balance the need to satisfy verification requirements while ensuring that the procedures do not compromise sensitive secrets vital to national security. Nuclear weapons contain more sensitive components than most other systems because knowledge of specific weapon operations and components could render them useless.

---

<sup>203</sup> Ibid., 91.

Strategic stability, nuclear weapons reduction, and verification are all primary goals to expect from nuclear arms control and, other than a small amount of nuclear weapons reduction, SORT failed meet any of these goals.<sup>204</sup> Kenneth Adelman, a former Assistant to the Secretary of Defense and defense pundit, stated that SORT might be the last strategic arms control agreement ever negotiated because it was now possible for the USA and Russia to reduce nuclear weapons on their own without the need for formal agreements.<sup>205</sup> Adelman completely ignored the importance of verification, which builds confidence between both parties, streamlines intelligence processes, and reduces the possibility of a miscalculation because of various ambiguous indicators that can lead to a nuclear war. He also fails to recognize that getting assumptions wrong regarding nuclear weapons can have devastating consequences, so Russia and the USA will continue to rely on these agreements to ensure parity and increase connections between the two former rivals.

SORT's flexibility made it really the first nuclear arms reduction treaty that did not rely on Cold War logic, but its lack of verification measures, adjudication mechanisms, and some amount of an effective time period makes it a very weak treaty overall. Even its proponents acknowledged that verification was needed stating that START I's verification procedures could aide analysts in determining SORT provisions. The USA's focus on terrorism during this period in history made it possible for the Senate to ratify such a weak treaty. Furthermore, the focus on terrorism actually increases an intelligence analysts' workload and verification allows these analysts to focus on nuclear weapons quickly and efficiently to then get back to other more complex

---

<sup>204</sup> Randy Rydell, "Disarmament without Agreements?" *International Negotiation*, 2005: 368.

<sup>205</sup> Ibid.

problems. The USA and Russia ratified the treaty in 2003 and no further significant discussions regarding strategic nuclear arms control occurred until New START.

START I's expiration and the flurry of action taken by the Obama Administration made it clear that verification was still needed between Russia and the USA, even if they supposedly "trusted" one another.

### *New START*

Presidents Barrack Obama and Dmitry Medvedev signed New START on April 8, 2010, which concluded negotiations that lasted for less than a year. This treaty kept some of SORT's flexibility in determining nuclear composition, helped meet Obama's goal of further reduction in nuclear weapons, and implemented various verification provisions that no longer existed with START I's expiration. Through analyzing the Senate hearings, the Senate report on New START, and various other articles written on the subject, valuable information helps explain why verification provisions are included in the USA and Russian strategic nuclear arms reduction treaties even after the end of the Cold War. Verification provisions provide insight into nuclear force operations, increase each country's comfort level that a nuclear attack is not imminent, supplement NTM collection, and provide an avenue to address a wide range of issues, both nuclear and non-nuclear, between Russia and the USA.

New START kept some of SORT's flexibility because it allowed each side to determine the exact structure of its nuclear force, but it included a verification regime similar to START I. Both sides got the flexibility desired to adjust their nuclear weapons based on their own viable strategy, while also establishing a verification regime to increase transparency of each other's nuclear forces. New START's nuclear weapons

reductions were modest, but the verification procedures within the treaty increased predictability and trust in the USA-Russia relationship.<sup>206</sup> Verification increases contact between both countries, so that a variety of issues, nuclear and non-nuclear, are open for discussion, at least unofficially. The USA, and probably Russia too, did not realize how much it relied on verification measures outside of NTM until they no longer existed, so New START put many of these back into place. New START made these verification measures less complicated, which was possible due to increased trust between the USA and Russia, even while acknowledging that trust was not without a desire for verification.

President Obama's transmittal letter to the U.S. Senate for New START ratification argued that it enhanced American national security by further reducing nuclear stockpiles that were verified through on-site inspections, notification, data exchange, and cooperative measures in addition to NTM.<sup>207</sup> His statement reflected the belief that reducing nuclear weapons actually improved national security, which was traditionally a controversial point of view concerning strategic nuclear arms control. There was typically the fear that a reduced nuclear stockpile caused vulnerability to a nuclear attack, particularly a surprise attack that eliminated second-strike capability. In this case, President Obama stated that this was not a concern because more nuclear weapons were not necessarily safer; smaller stockpiles force policymakers to think harder before using nuclear weapons. By highlighting verification in his transmittal letter,

---

<sup>206</sup> John K Warden, "After a New START," *U.S. Naval Institute Proceedings*, July 31, 2012, <http://web.ebscohost.com.cuhsl.creighton.edu/ehost/detail?vid=3&sid=d6a36174-1c95-444b-8eb9-888df3a09859%40sessionmgr113&hid=125&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=aph&AN=77244712> (accessed February 16, 2013).

<sup>207</sup> *Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms*, III.

Obama provided a clear indication that this was the primary difference between New START and SORT.

Overall, New START verification provisions are very similar to START I's with a few modifications. The treaty intended to develop a way to verify compliance that adapted, simplified, and made START I's provisions less costly.<sup>208</sup> This made sense because the Reagan Administration, and later the G.H.W. Bush Administration, took nearly ten years to draft START I, and it provided extensive detail on verification that could be reused. The USA and Russia had fifteen years of using these verification procedures and understood how they worked. Using START I measures with slight modification also highlighted some new realities because it made those procedures less resource intense in terms of money, people, and time. This partially reflects the fact that the USA and Russia have developed some level of trust between them and neither is willing to expend exorbitant amounts of resources to verify this treaty. The treaty further reduces costs by simplifying counting rules. Under the New START provisions, each ICBM, SLBM and strategic bomber counts as one nuclear warhead.<sup>209</sup> This allows inspectors and intelligence analysts to ignore specific warhead attributions for each system because it no longer matters for treaty compliance, which saves time and effort. The obvious problem with this provision is that it only allows a country to maintain rough parity with the other participant. Some systems can carry more nuclear warheads than others, so if one country considers those systems more vital to its national security strategy than the other, it will have more nuclear warheads.

---

<sup>208</sup> Ibid., 197.

<sup>209</sup> Ibid., 199.

The treaty also includes inspections of non-deployed nuclear warheads.<sup>210</sup> As previously noted, this was a major concern with SORT primarily because these non-deployed systems might fall into terrorist control. Although New START verification provisions cannot absolutely determine what happens with non-deployed nuclear warheads, it at least attempts to address the issue instead of failing to try because of verifications' inherent limitations. There was some domestic political rationale behind this provision as well because American policymakers can use New START's verification protocols as proof of their concern over terrorist use of nuclear weapons. Furthermore, they can use these provisions as evidence of their continued attempt to prevent terrorists from obtaining a nuclear device from the world's largest nuclear stockpile outside of the USA. Russia can make similar claims if American nuclear material ever made it into the wrong hands. Just like other types of verification procedures, reassuring one's domestic constituents is one of the key reasons to put them into place because it eases fears of nuclear attack, whether by state or non-state actors. These inspections also make it possible to open a dialogue on nuclear storage security and even provide a mechanism to discuss nuclear terrorism before assuming that the other country was somehow complicit in terrorists getting a weapon.

To address SORT's lack of an adjudication mechanism for treaty violations, New START established the Bilateral Consultative Commission that is modeled after START I's Joint Compliance and Inspection Commission. This allows Russia and the USA to address any possible compliance issues and forces each side to explain why things occurred. This explanation process is critical because it allows both sides to explain why

---

<sup>210</sup> Ibid., 94.

they cheated on certain provisions and opens a mechanism to resolve their differences diplomatically. This explanation should give everyone insight into the other's intent, which as previously noted, is difficult to determine through verification procedures alone. This commission also provides a method to hold both sides accountable to each other and makes verification actually worthwhile because violations can have consequences, even if those consequences are simply explaining a decision before the committee.

The treaty does not allow for all missile launches to include telemetric data exchange, but any launch notification will include telemetric broadcast information.<sup>211</sup> This means that both Russia and the USA can collect telemetry data on any launch using various intelligence collection assets, but will only receive tapes on certain launches. If a launch includes telemetry exchange, then it needs to state specific frequency information and various other technical data that makes intelligence collection of these signals easier for everyone involved. This allows intelligence analysts to compare data from both types of missile launches to determine with greater accuracy launch range, possible payload and a variety of other factors that help them to understand and accurately assess capabilities. This is another resource saving measure because it places the onus on each country to collect telemetry on most launches. Since New START is not concerned with MIRVs and throw-weights, telemetry exchange is not necessary for verification, but it does help build confidence between both sides by increasing knowledge that can reduce the chances of misinterpreting statements about nuclear preparedness or capabilities.<sup>212</sup>

---

<sup>211</sup> Ibid., 181-182.

<sup>212</sup> Hearings before the Committee on Foreign Relations United States Senate, "The New START Treaty (Treaty Doc. 111-5)," Washington D.C.: U.S. Government Printing Office, 2010: 11.

When START I expired, the USA and Russia lost crucial visibility of each other's nuclear weapons that New START helps resolve by creating transparency through various verification measures. This transparency reduces the chance of miscalculation during times of increased tensions.<sup>213</sup> As an example, the USA flew strategic bombers over South Korea in 2013, but this did not necessitate a Russian military response because New START notifications likely indicated precisely when this would occur. Both Russia and the USA can now base military planning on fairly reliable data and not guesses, called assessments in the intelligence community. This reliable data enhances the strategic stability of the relationship. For instance, the Senate Foreign Relations Committee Hearing highlighted the alleged Soviet Union violation of the BWC in 1979 as a clear indication why verification measures are needed because NTM alone was initially unable to determine that the Soviets still maintained this type of weapon.<sup>214</sup> Interestingly, during the SORT debates, proponents highlighted that NTM detected the 1979 violation as proof that NTM worked for treaty verification without the need for on-site inspections. This shows how both sides of the American political spectrum used the exact same event to help make their case for or against treaty verification provisions. The Senate Foreign Relations Committee's report identified that an unintended consequence of on-site inspections is that it gives regular access to those responsible for nuclear weapons and decisions.<sup>215</sup> This statement highlights the intangible benefits to on-site inspections that are not formally addressed within the treaty. This shows that inspections

---

<sup>213</sup> Ibid., 1, 4, 5, 6.

<sup>214</sup> Ibid., 30.

<sup>215</sup> Ibid., 33.

also provide a way to assess nuclear decision-making processes that might help determine actual intentions in during crises.

There are several other advantages and disadvantages to New START's on-site inspection provisions. The treaty simplifies certain inspection activities that had required two inspections under START I and reduces costs associated with these trips.<sup>216</sup> Now multiple things can occur on a single trip instead of declaring an inspection and then returning later to observe other areas that fall under other verification requirements. Although the number of inspections is decreased and this saves some resources, from an operational and implementation perspective there is very little different in actual inspections. Each inspection is less intrusive but still requires the same number of inspectors that lock down whatever base for roughly the same duration of time.<sup>217</sup> However, the reduced number of inspections allowed concerned the Senate Foreign Relations Committee. The Russians have more nuclear-related facilities than the USA, so reduced inspections gives them an inherent advantage in verifying compliance.<sup>218</sup> This was a very Cold War era argument that assumes a zero sum scenario where Russia's gain is an automatic loss for the USA. It also refuses to acknowledge that everyone cheats on treaties in some form and to some degree, and that the verification standard still in use by the USA is Reagan's loose constructionist one designed to detect militarily significant violations.

Inspectors are also allowed to pick an ICBM in New START and actually count its warheads instead of simply verifying that it does not have more warheads than what

---

<sup>216</sup> Ibid., 20.

<sup>217</sup> Randall M. Broshar, interview by Author, Email Correspondence - U.S. Strategic Command Intelligence Analyst and Nuclear Arms Control Treaty Subject Matter Expert (June 10, 2013).

<sup>218</sup> Ibid., 115.

the treaty's database lists.<sup>219</sup> This provision is both advantageous in some ways and disadvantageous in others. On the one hand, it helps to determine the exact number of warheads each system likely contains, which allows the military to create a more effective plan. On the other hand, the nose section's design is one of the most closely guarded secrets of nuclear system design because it does not just contain the warheads, but also various countermeasures to defeat any type of missile defense. Since this is the case, verifying warheads serves as a disadvantage as well because it increases the risk of compromising sensitive design information. Even with coverings and other measures developed to protect the design during inspections, the inspector can still note certain design features that might compromise the system's effectiveness. Overall, however, this provision demonstrates an increased trust between the two states because it shows less concern over countering a strike and more concern over determining how many warheads each system actually contains. Both the Russians and the Americans can use this provision to determine nose section capabilities, which makes both states vulnerable during a nuclear war. This mutual vulnerability is one of the key things that helps stabilize Russia-USA strategic relations because both sides acknowledge the disastrous effects of a nuclear exchange. The fact that each system only counts as one warhead under New START further helps this provision because Russia and the USA do not have to worry about cheating by placing more warheads on a system than attributed during initial declarations.

In the USA, other constituencies opposed the on-site inspection provisions. Some argued that on-site inspections were less important now than in the past because

---

<sup>219</sup> Ibid., 27.

inspectors already had a good grasp of nuclear activities, capabilities, and facilities that they obtained under START I's regime.<sup>220</sup> Norman Polmar further argued that NTM had improved considerably and that the USA and Russia had regular exchanges of scientists and nuclear experts that facilitated nuclear infrastructure knowledge.<sup>221</sup> Although Polmar is correct and NTM has improved over the years, he failed to acknowledge that NTM still has classic limitations that the other verification measures, including on-site inspections, help to augment in order to develop a more complete picture. This is especially true of Russia because, as the USA's primary enemy for nearly fifty years during the Cold War, there are likely very few NTM assets that Russia is not acutely aware of and able to deceive whenever it chooses. Although nuclear scientist and expert exchanges are useful, on-site inspections provide a host of intangible information that scientists and other experts might not notice. It is also common for military members, just like other communities, to open up to other military members more easily because there is a shared sense of purpose. From an intelligence point of view, on-site inspections are invaluable because they help confirm information obtained from other sources, notably NTM.<sup>222</sup>

Critics identified other problems with New START's "weak verification protocols."<sup>223</sup> The Russians did not have to allow inspectors to verify mobile launcher and missile destruction.<sup>224</sup> This was an unimportant criticism because each mobile system requires a unique identifier, so if either the USA or Russia declare a missile

---

<sup>220</sup> Norman Polmar, "STARTing Anew," *U.S. Naval Institute Proceedings*, February 2011, <https://login.cuhsl.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=58545745&site=ehost-live> (accessed February 12, 2013)

<sup>221</sup> Ibid.

<sup>222</sup> Broshar, Email Interview.

<sup>223</sup> William P. Hoar, "Dangerous Rush for the New START," *The New American*, January 10, 2011: 41.

<sup>224</sup> Ibid., 43.

destroyed and it later shows up in an on-site inspection or NTM, the Bilateral Consultative Commission can address this issue and determine if cheating was actually significant or not. William Hoar further argued that New START on-site inspections were weaker than START I's because the Russians could declare any area a maintenance area and make it off limits to inspections. Of course, the reverse is also clearly true and the USA can take similar steps, if it so chooses. Hoar attempted to make a strict constructionist argument to stop ratification when loose constructionism is the USA standard for determining whether verification is effective.

The requirement for unique identifiers on mobile systems is important for other reasons, both politically and for intelligence efforts. Politically this signifies some level of trust between the USA and Russia because each side accepts that the other will not deliberately try to cheat this system. It will be simple for either Russia or the USA to switch numbers on missiles, show a specific system at a specific location, and move other missiles into another area to avoid verification measures for some reason. These unique identifiers allow analysts to track mobile missiles with relative ease using either NTM or even on-site inspections. Since they can follow a specific missile, or even a battery or battalion, to determine tactics, techniques, and procedures for operating these systems, the identifier decreases the intelligence analyst's job and increases the military's ability to plan an effective strategy. Each side understands that mutual vulnerability is important, as is clarifying verification measures to make them less costly.

New START does not allow continuous monitoring at missile production facilities, known as portals.<sup>225</sup> The argument was that continuous portal monitoring was not necessary because NTM can capture this data. The Senate Foreign Relations Committee identified this as a concern with the treaty because continuous portal monitoring actually supplements NTM's weaknesses.<sup>226</sup> The problem was that the Russians refused to allow continuous monitoring at Votkinsk, its primary missile production facility.<sup>227</sup> Since the USA does not currently produce new nuclear weapons systems, continuous portal monitoring was a single-sided concession that the Russians were unwilling to make. This demonstrates the limits of cooperation because while both sides are willing to allow the other a certain level of advantage within the treaty, there cannot be a clear case where provisions benefit only one side. But even without continuous portal monitors, New START's notification measures help NTM to monitor Votkinsk more accurately because it allows the American Intelligence Community to forecast system movements and plan appropriate intelligence collection.<sup>228</sup> This combination of measures illustrates the fact that a variety of verification measures make it effective. Since this combination of verification provisions provides enough detail on Russian ballistic missile production to satisfy American policymakers, Russia's refusal to allow portal monitors will not significantly affect the USA's security. Furthermore, the other elements of the treaty, most notably all of the other verification protocols, make this

---

<sup>225</sup> United States Senate Committee on Foreign Relations Report, *Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms (The New START Treaty)*, United States Senate Committee on Foreign Relations Report with Minority Views, Washington D.C.: U.S. Government Printing Office, 2010: 20.

<sup>226</sup> *Ibid.*, 26 and 116.

<sup>227</sup> Hearings before the Committee on Foreign Relations United States Senate, "The New START Treaty," 80.

<sup>228</sup> *Ibid.*, 338.

such a minor point that it did not make sense to refuse to sign or ratify the treaty because of a lack of portal monitors.

The fact that Russia continues to produce nuclear weapons actually makes verification more important because of all the ways its various measures supplement NTM. The Russians are actually replacing some of their older missiles and New START verification procedures allow the USA more access to missile launches and systems than relying only on NTM. Before START I expired, it had been quite a while since the USA only had NTM to confirm Russian nuclear activity.<sup>229</sup> This statement reiterates that the USA, and probably Russia, develops a certain level of comfort with various verification procedures that go unnoticed until they no longer exist. It also identifies an important fact about most intelligence tasks and techniques that deal with interpreting vague or incomplete data for a problem set, which is that failure to use them can cause certain skills to atrophy. Although the USA has tremendous analysts for its NTM capabilities, these analysts grew accustomed to using various other sources for monitoring Russian nuclear forces, such as on-site inspections and notifications, to help confirm what NTM showed. Without these other measures, analysts cannot be as certain about what is occurring and this can cause interpretations based on even more incomplete information which then increases the risk of miscalculation.

One of America's more contentious plans for its nuclear weapons challenges the limits of Russia's trust. The USA plans to make some of its ICBMs and SLBMs conventional weapons by replacing the nuclear warheads with conventional warheads. This is largely a response to the September 11, 2001 terrorist attack when the USA had

---

<sup>229</sup> Howard Baker, "Let's trust, and verify," *USA Today*, December 2, 2010: 11a.

few available options for a rapid strike capability against terrorist targets, other than nuclear weapons. Nuclear weapons are not good candidates for these targets because their destruction is not proportional to the threat, which violates the Geneva Convention requirement for proportional military actions. The problem with using these newly conventional warhead weapons is that the flight profiles will look almost identical to nuclear flight profiles because the USA will launch them from the same locations as its nuclear weapons. These flight profiles require efficient and effective notification of other nuclear-armed states, notably Russia and China, but they also require these same states to trust that the USA is not attacking them with a nuclear first strike. It is unlikely that any country would be willing to have a potential nuclear-armed warhead overfly it, even if there is a certain level of trust between all sides involved. New START acknowledges this dilemma by treating both conventional and nuclear variants as nuclear because one cannot visibly tell the difference between the systems through NTM or on-site inspections.<sup>230</sup> This forces the USA to carefully consider how many nuclear weapons to convert to conventional warheads because it becomes one less nuclear weapon useful for nuclear planning options, which might cause problems domestically for any administration or Congress if the American public feels that the USA's nuclear weapons stockpile is insufficient to guarantee its security.

New START increased diplomatic connections between the USA and Russia through the negotiation process and these connections will continue through the actual

---

<sup>230</sup> United States Senate Committee on Foreign Relations Report, *Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms (The New START Treaty)*: 52.

verification measures.<sup>231</sup> As previously noted, these connections allow the USA and Russia to address various concerns, even if not directly related to New START. Put another way, it is a placeholder to transition to other issue areas relatively easily because regular connections already exist.<sup>232</sup> New START is a key part of the Obama Administration's attempt to "reset" relations between the USA and Russia. It brought nuclear arms reduction back to a Reagan-era "trust, but verify" situation in which both the USA and Russia are far more comfortable dealing with one another.<sup>233</sup> This treaty demonstrates that the USA and Russia can still work together to create something mutually beneficial although this does not mean that they will always agree with each other on every issue. It does at least increase the possibility to work together in the future. Only time will tell whether this is the case or if American-Russian relations will continue to sour over various other issues throughout the world.

Some senators argued that New START verification procedures were less strict than START I's procedures, a possible concern during the ratification debate. Those implementing New START verification provisions do not note any major weaknesses in the verification regime. There are differences that added some things and removed others, but there was simply no logic to retaining those items removed.<sup>234</sup> This does not make verification "weaker" just different. A counter argument was that the measures were not necessarily less strict, but New START tailored these procedures to meet

---

<sup>231</sup> Hearings before the Committee on Foreign Relations United States Senate. "The New START Treaty:" 34.

<sup>232</sup> Stephen J. Cimbala, "New START or Not? US-Russian Nuclear Arms Reductions in Perspective," *Comparative Strategy*, 2010: 260-261.

<sup>233</sup> Barack H. Obama, "The President's News Conference," *Administration of Barack H. Obama*, 2010, December 22, 2010: 1.

<sup>234</sup> Broshar, Email Interview.

different requirements from START I and also saved resources.<sup>235</sup> During the U.S. Senate Foreign Relations Committee Hearing, Dr. Edward L. Warner, III, Secretary of Defense Representative to Post-New START Negotiations, acknowledged that notifications, unique identifiers and the comprehensive New START database will reinforce one another when combined with NTM and on-site inspections.<sup>236</sup> With START I's expiration, there existed no verification regime between the USA and Russia for their nuclear weapons and the U.S. Senate's debate did not change this fact. Since neither country extended START I, the choice really boiled down to the New START verification measures or nothing at all.<sup>237</sup>

Another challenge with New START dealt less with the treaty itself than the urgency to ratify the treaty quickly, primarily because no verification regime existed for Russian or American nuclear weapons. Supporters of New START argued that if the Senate did not ratify the treaty in short order it would threaten the USA's national security.<sup>238</sup> This argument was interesting because 1) this was true during SORT, and 2) the Obama Administration argued that Russia was a friend, while others, primarily Secretary of Defense Robert Gates, went so far as to state that Russia was not a threat to the USA.<sup>239</sup> The Obama Administration was trying to use national security to increase the urgency for ratification while also identifying USA-Russia relations as friendly. There is a relatively high level of trust between the USA and Russia at this time, but that does not mean that both sides are willing to forgo all the added benefits of verification,

---

<sup>235</sup> Hearings before the Committee on Foreign Relations United States Senate. "The New START Treaty:" 82.

<sup>236</sup> Ibid., 228.

<sup>237</sup> United States Senate Committee on Foreign Relations Report, *Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms (The New START Treaty)*: 20.

<sup>238</sup> Hoar, "Dangerous Rush," 42.

<sup>239</sup> Ibid.

especially assuring one another about the status of its nuclear weapons. The chance of nuclear miscalculation from either Russia or the USA due to incomplete or inaccurate intelligence is a far greater threat to national security than Russia as a hostile enemy. These unintended consequences are the most dangerous and verification helps increase both sides' confidence that nuclear war is not going to occur in the near future. Even in 2013, the USA is still more concerned with terrorists' use of a nuclear weapon than with Russia's nuclear weapons. New START contains verification measures that allow the USA to inspect the largest nuclear stockpile outside of direct American control to help prevent this from happening with a Russian warhead.

As previously mentioned, the Senate used Reagan's loose constructionist standard when it debated the New START's verification measures. The senators ultimately determined that New START met this standard, but cautioned that the USA needed to give priority to the treaty's verification regime and American NTM assets.<sup>240</sup> With the treaty's more resource effective measures, it is easier for presidential administrations to focus on these regimes even with increased demands on various limited resources, most notably money. In order to ensure that this focus remains, the Senate requires the administration to report on the effectiveness of verification procedures for the first five years of the treaty.<sup>241</sup> These reports should provide valuable insights into Russian actions, to include possible cheating and the extent of this cheating. Future research can use these reports to determine if the various pre-ratification arguments and concerns still hold true or whether the verification measure effectively

---

<sup>240</sup> United States Senate Committee on Foreign Relations Report, *Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms (The New START Treaty)*: 26.

<sup>241</sup> *Ibid.*, 74.

addresses these concerns from a loose constructionist standard. The reports and congressional questions regarding them will help to refine the understanding of the importance of verification and its need in future treaties.

The *Bulletin of Atomic Scientists* interviewed New START's chief negotiator Rose Gottemoeller in 2011 about the New START verification procedures, after the treaty was in effect for approximately one year. Gottemoeller is currently the Acting Under Secretary for Arms Control and International Security. During the interview, Gottemoeller indicated that the treaty provided some good information on what was going on inside Russian nuclear forces.<sup>242</sup> She also stated that the New START treaty database is a living document that one can continue to modify, as more information is available about a particular system or location.<sup>243</sup> Gottemoeller's statements reflect a few important points. First, they highlight that on-site inspections, cooperative measures, and notification provide some level of knowledge that NTM cannot, and identify, at least generically, that potential intelligence gaps existed within the American Intelligence Community's assessment of Russian nuclear forces. The New START verification procedures help provide answers to some those intelligence questions. Just as with similar statements, the reverse is also likely true: that these verification measures give Russia more accurate information regarding American nuclear forces. Second, the database is extremely flexible so that Russia and the USA do not have to adhere to rigid standards and can make formal adjustments within the construct of the treaty. This allows both sides to make changes, within reason, based on changing strategic

---

<sup>242</sup> Rose Gottemoeller, interview by *Bulletin of Atomic Scientists*, "Rose Gottemoeller: Getting to yes," 2011: 4.

<sup>243</sup> *Ibid.*

assumptions, calculations and priorities. At this point, there are no published statements as to the effectiveness of the various measures to help determine whether criticism of the various provisions was valid.

Goetmoeller's discussion of the treaty database as a living document alludes to the fact that computer technology has changed verification. Analysts should be able to gain access to this database to perform queries and get information to aid in their particular verification problems. The inspection reports are even scanned in and made available on classified networks, which speeds up the process for intelligence analysts to read the reports and confirm findings through other sources.<sup>244</sup> These analysts can use email and other means to rapidly ask and answer questions that used to be much more cumbersome without computer technology. There are other things that technology has not influenced because notifications still use the same outdated systems as START I and there is a notable lack of automation in getting the databases updated. Inspection reports are still manually entered into the database. These reports are still done in long hand and translated before being delivered to both countries.<sup>245</sup> It is unclear whether a lack of trust in technology or merely the reliance on what everyone is comfortable with is responsible for some of these seemingly outdated practices.

With its more transparent numbering system and verification standards, New START highlights an important difference in the post-Cold War strategic environment. In the past, verification procedures were primarily concerned with making sure no significant cheating could occur and, although cheating remains a key reason for verifying something as important as nuclear weapons, there are other benefits to

---

<sup>244</sup> Broshar, Email Interview.

<sup>245</sup> Ibid.

verification.<sup>246</sup> Verification is important as a confidence building measure, to supplement traditional intelligence collection capabilities, and to increase contact between both sides to resolve a variety of differences. These differences might have nothing to do with nuclear arms reductions, but they allow both sides to address them, at least unofficially.

The U.S. Senate Foreign Relations Committee's report acknowledged that arms control verification is not a perfect science and cannot be, but that it needs to be good enough to increase confidence that the other side followed various treaty measures, deterred cheating, and prevented clear disadvantage due to cheating.<sup>247</sup> It further acknowledged that verification needs to balance verifying an adversary's capabilities while avoiding similar verification measures at some of the country's key facilities that can compromise sensitive information.<sup>248</sup> These remarks reiterate the careful balance needed to establish verification processes. The concern over cheating continues to highlight that nuclear weapons, unlike other weaponry, can cause such devastation if used that verification is essential to ensure weapons reduction and to build policymakers' confidence; it decreases the risk of miscalculations should tensions increase for some reason.

New START combines the best aspects of both START I and SORT. New START's verification protocols are similar to START I's, but contain some modifications that are different, not necessarily weaker or less stringent, just more in line with current treaty requirements. New START kept some of SORT's flexibility by allowing the USA and Russia to determine their own nuclear force structure. By adding

---

<sup>246</sup> James Kitfield, "Lugar: Pass New START Now." *National Journal*, 2010: 9.

<sup>247</sup> United States Senate Committee on Foreign Relations Report, *Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms (The New START Treaty)*: 22.

<sup>248</sup> *Ibid.*

both verification and adjudication provisions, New START acknowledges that these aspects continue to have importance even after the end of the Cold War. Verification in particular helps to increase policymakers' confidence that nuclear war is not imminent and opens dialogue between Russia and the USA that can span a range of issues. Interestingly, although technology improved verification in some ways, the majority of verification provisions still use old systems and methods.

## **CONCLUSION**

Although nuclear weapons are legal weapons, they are capable of such immense destruction that neither Russia nor the USA expects to use them in a conflict. These states have a stake in continuing to negotiate and sign treaties that reduce their respective arsenals. These treaties must contain verification protocols, but the overarching reason for these protocols has changed with the end of the Cold War. This thesis states that there is a need for verification even if some policymakers and analysts debate the need during times of "friendly" relations between the USA and Russia. It provides this analysis through examining verification's primary parts, notably intelligence and politics, and then examines inclusion and exclusion of verification in USA-Russia nuclear arms control treaties from START I through New START. No other research takes the approach of specifically focusing on verification in nuclear arms control treaties and then actually compares the major treaties verification provisions to highlight similarities and differences.

Intelligence sources and methods provide the data for any type of verification system. These sources and methods have a variety of strengths and weaknesses that make their information less than accurate and is one reason why perfect verification is

impossible. Verification protocols in a treaty are actually a combination of items that help to reduce some of these inaccuracies to provide a clearer picture of nuclear force operations. Additionally, the primary source in treaty verification is NTM, so things like notifications, on-site inspections and cooperative measures actually supplement this collection. On-site inspections may also provide access to intangibles like troop morale or training that can further help intelligence analysts provide accurate assessments on nuclear forces to policymakers.

Verification is at its core a political decision because politics often dictate whether states declare treaty violations or not. Even verification provisions are the result of both domestic and international politics as negotiators try to appease the domestic constituency without proposing a regime that would be unacceptable to the other country. For example, SORT's lack of a verification regime was possible because domestically the USA was concerned with terrorism and internationally Russia did not see the need for them because START I's provisions were still in effect. There are essentially two different standards that policymakers can use to determine verification's effectiveness. The first is a strict constructionist standard that highlights every minor treaty violation as important. The second is loose constructionism that focuses only on militarily significant violations. Reagan established the USA's precedent for officially using a loose constructionist standard for treaty verification. This does not stop certain politicians and analysts from attempting to apply strict constructionist standards to highlight a treaty's verification "weaknesses," but loose construction remains the standard that the U.S. Senate uses for treaty ratification.

Although verification's classic reason for inclusion into treaties is to deter cheating, this actually poses a challenge for nuclear arms control treaties. There is no effective means of enforcing nuclear arms control treaties other than nuclear war, so a certain amount of minor cheating is actually accepted. After the end of the Cold War, it became more unlikely that either the USA or Russia would deliberately cheat on these treaties because both received unintended benefits from them. Reducing nuclear weapons decreased the economic burden for maintaining large nuclear arsenals for both the USA and Russia. The verification protocols in these treaties also helped to increase contact between these two countries that helped build confidence and trust while providing clearer information to reduce any chance of miscalculation during times of increased tensions.

Not surprisingly, views on nuclear arms control treaties still generally relate back to Cold War mentalities. The Russians still use nuclear arms control treaties to ensure parity and voice concerns over missile defense because it upsets the strategic balance. Russia also uses its nuclear weapons to continue to claim its importance within the international community. Some of the USA's domestic laws both hamper and help when it comes to verification. CTR is an excellent example of a law that helps supplement treaty verification by providing money and expertise to aide Russia in nuclear arms eliminations. But American policymakers also expect too much from verification and seem to want a strict constructionist interpretation when the accepted standard is loose constructionist. These differing viewpoints by both the Russians and Americans increase the complexity of negotiations and highlight the importance of verification in these treaties.

The only way to determine the necessity for verification provisions is through examining the various nuclear arms control treaties. Although START I is definitely a Cold War treaty, its thorough verification provisions served as the standard for nearly twenty years, even after the end of the Cold War. START I consisted of a combination of measures including NTM, on-site inspections, notification, and cooperative measures that provided for a robust verification regime. Even though SORT contained no verification provisions, during Senate testimony various G.W. Bush Administration personnel acknowledged that START I's provisions would be useful in providing insight into nuclear force requirements related to SORT. It was not until after START I expired that the value of verification was truly highlighted. The USA and Russia rapidly negotiated, signed, and ratified New START largely to bring back applicable verification measures. It became apparent that verification does far more than merely reduce cheating on nuclear arms control treaties.

The topic of verification may be refined, particularly if any of the classified material is declassified, which might provide additional insight into verification's importance. A particularly interesting comparison exists between SORT's and New START's classified ratification documents because they could indicate why the Senate was willing to forego explicit verification provisions in SORT's case and then criticized the effectiveness of New START's provisions, even though it actually reestablished verification measures. These discussions might help determine how the G.W. Bush Administration convinced the committee members that START I's verification measures were good enough even though they expired three years before SORT went into effect. New START discussions might provide insight into precisely what the US Intelligence

Community missed when START I expired and how this affected analysts' ability to provide accurate assessments to senior US policymakers.

It is clear that verification protocols are an essential element in nuclear arms control treaties. These provisions help to detect cheating, but the end of the Cold War made this less of a concern because both the USA and Russia receive far too many benefits from formal treaties to worry about minor cheating. Verification is needed in these treaties because it increases analysts' insight into nuclear force operations and supplements NTM assets that can provide more accurate information, increases policymakers' confidence in the other side, and reduces the risk of miscalculation during times of increased tensions. Verification also increases contact between Russians and Americans that allows both sides to discuss, officially and unofficially, a wide range of topics that might not always relate to the actual treaty itself. This increased contact helps to explain any potential issues with treaty interpretations and provides an outlet for asking questions that might help deescalate a potential hostile situation.

## BIBLIOGRAPHY

- Alongi, Maria R. "Verification and Congress: What Role for Politics?" In *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown and William K. Cheek, 26-34. McLean: Brassey's (US), Inc., 1992.
- American Security Project. *The Nunn-Lugar Cooperative Threat Reduction Program: Securing and Safeguarding Weapons of Mass Destruction*.  
<http://americansecurityproject.org/featured-items/2012/fact-sheet-the-nunn-lugar-cooperative-threat-reduction-program-securing-and-safeguarding-weapons-of-mass-destruction/> (accessed June 11, 2013).
- Andropov, Yuri. *The Reagan Files*. January 28, 1984.  
<http://jasonbin.com/thereaganfiles/id28.html> (accessed May 3, 2013).
- Appleby, Charles A., and John C. Baker. "Verification and Mobile Missiles: Deterrence, Detection, or Assurance?" In *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown and William K. Cheek, 60-78. McLean: Brassey's (US), Inc., 1992.
- Arms Control Association. *The Biological Weapons Convention (BWC) At a Glance*. September 2012. <http://www.armscontrol.org/factsheets/bwc> (accessed June 3, 2013).
- . *The Chemical Weapons Convention (CWC) at a Glance*. October 2010.  
<http://www.armscontrol.org/factsheets/cwcglance> (accessed June 3, 2013).
- Baker, Howard. "Let's trust, and verify." *USA Today*, December 2, 2010: 11a.

- Bellany, Ian. "An Introduction to Verification." In *The Verification of Arms Control Agreements*, edited by Ian Bellany and Coit D. Blacker, 1-13. Totowa: Frank Cass & Co. Ltd., 1983.
- Boehme, Peter. *The Verification Regime of the Chemical Weapons Convention: An Overview*. November 28, 2008. <http://www.opcw.org/news/article/the-verification-regime-of-the-chemical-weapons-convention-an-overview/> (accessed June 3, 2013).
- Bolton, John R. "A Treaty for Utopia." *National Review*, May 3, 2010: 32-36.
- Bresolin, Justin. *Fact Sheet: The Nunn-Lugar Cooperative Threat Reduction Program*. [http://armscontrolcenter.org/publications/factsheets/fact\\_sheet\\_the\\_cooperative\\_threat\\_reduction\\_program/](http://armscontrolcenter.org/publications/factsheets/fact_sheet_the_cooperative_threat_reduction_program/) (accessed June 3, 2013).
- Broshar, Randall M., interview by Author. Email Correspondence - U.S. Strategic Command Intelligence Analyst and Nuclear Arms Control Treaty Subject Matter Expert (June 10, 2013).
- Brown, James. "Introduction." In *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown and William K. Cheek, xv-xxiv. McLean: Brassey's (US), Inc, 1992.
- Bundy, McGeorge. *Danger and Survival: Choices About the Bomb in the First Fifty Years*. New York: Random House, Inc., 1988.
- Cambone, Stephen. "An Inherent Lesson in Arms Control." *The Washington Quarterly*, 2000: 207-218.
- Cimbala, Stephen J. "New START or Not? US-Russian Nuclear Arms Reductions in Perspective." *Comparative Strategy*, 2010: 260-277.

- Cimbala, Stephen J. "U.S. and Russian Strategic Nuclear Forces Under Cooperative Security: Moscow and After." *Journal of Slavic Military Studies*, 2005: 169-187.
- Cimbala, Stephen J. "US Strategic Nuclear Arms Control: Campaign Echoes and Obama's Options." *Defense & Security Analysis*, 2009: 175-192.
- den Dekker, Guido. "A new START to begin with: recent developments in US-Russian strategic arms reductions." *Security and Human Rights*, 2010: 81-92.
- Destler, I.M. "The Evolution of Reagan Foreign Policy." In *The Reagan Presidency: An Early Assessment*, edited by Fred I. Greenstein, 117-158. Baltimore: The Johns Hopkins University Press, 1983.
- Deudney, Daniel, and G. John Ikenberry. "Who Won the Cold War?" In *Foreign Policy*. Summer 1992.
- <https://login.cuhs1.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9206222892&site=ehost-live> (accessed April 4, 2013).
- Drell, Sidney D. "Verification Triumphs." *The Bulletin of the Atomic Scientists*, November 1991: 28-29.
- Durch, William J. "Verification of Limitations on Antisatellite Weapons." In *Verification and Arms Control*, edited by William C. Potter, 81-106. Lexington: Lexington Books, 1985.
- Freedman, Lawrence. "A New Theory for Nuclear Disarmament." *Bulletin of the Atomic Scientists*, 2009: 14-30.
- Gaddis, John Lewis. *The Cold War: A New History*. New York: The Pentagon Press, 2005.

- . *The Long Peace: Inquiries into the History of the Cold War*. New York: Oxford University Press, 1987.
- . *The United States and the End of the Cold War: Implications, Reconsiderations, Provocations*. New York: Oxford University Press, 1992.
- Gallagher, Nancy W. *The Politics of Verification*. Baltimore: The John Hopkins University Press, 1999.
- Garthoff, Raymond L. *Detente and Confrontation: American-Soviet Relations from Nixon to Reagan*. Washington D.C.: The Brookings Institution, 1994.
- George, Douglas. "The Estimative Process." In *Intelligence and Arms Control: A Marriage of Convenience*, edited by Thomas J. Hirschfeld, 19-29. Austin: University of Texas, 1987.
- Gottemoeller, Rose, interview by *Bulletin of Atomic Scientists*. "Rose Gottemoeller: Getting to yes," 2011.
- Graham, Thomas. "The Essentiality of Effective Verification: From Sputnik to the Space Station." *Problems of Post-Communism*, 2006: 17-29.
- Guertner, Gary L. "The Politics of Soviet Arms Control Compliance: Lessons of the Reagan Administration." In *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown and William K. Cheek, 35-59. McLean: Brassey's (US), Inc., 1992.
- Hearings before the Committee on Foreign Relations United States Senate. "The New START Treaty (Treaty Doc. 111-5)." Washington D.C.: U.S. Government Printing Office, 2010. I-442.

- . "Treaty on the Strategic Offensive Reduction: Moscow Treaty." Washington D.C.: U.S. Government Printing Office, 2002. I-272.
- Hirschfeld, Thomas J. "A Marriage of Convenience." In *Intelligence and Arms Control: A Marriage of Convenience*, edited by Thomas J. Hirschfeld, 9-18. Austin: University of Texas, 1987.
- Hoar, William P. "Dangerous Rush for the New START." *The New American*, January 10, 2011: 41-43.
- Horner, General Charles. *Nuclear Arms Control, Non-Proliferation and Disarmament in the Post-Cold War Security Environment: Keynote Address*. Spring/Summer 1999.
- <https://login.cuhs1.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=3451961&site=ehost-live> (accessed February 25, 2013).
- Huntington, Samuel P. "The Defense Policy, 1981-1982." In *The Reagan Presidency: An Early Assessment*, edited by Fred I. Greenstein, 82-116. Baltimore: The Johns Hopkins University Press, 1983.
- Kitfield, James. "Lugar: Pass New START Now." *National Journal*, 2010: 9.
- Kovich, Andrew S. "50 Year Later: Tough Questions Facing Nuclear Arms Reduction." *Air & Space Power Journal*, 2009: 41-43.
- Krass, Allan S. "The Soviet View of Verification." In *Verification and Arms Control*, edited by William C. Potter, 37-62. Lexington: Lexington Books, 1985.

- Krepon, Michael. "The Political Dynamics of Verification and Compliance Debates." In *Verification and Arms Control*, edited by William C. Potter, 135-151. Lexington: Lexington Books, 1985.
- Lehman II, Ronald F. "Verification in the Age of Glasnost and Open Skies." In *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown and William K. Cheek, 3-12. McLean: Brassey's (US), Inc., 1992.
- Lettow, Paul. *Ronald Reagan and his Quest to Abolish Nuclear Weapons*. New York: Random House Trade Paperbacks, 2005.
- Lowenthal, Mark M. "The Politics of Verification: What's New, What's Not." In *Verification: The Key to Arms Control in the 1990s*, edited by John G. Tower, James Brown and William K. Cheek, 13-25. McLean: Brassey's (US), Inc, 1992.
- Lowenthal, Mark M., and Joel S. Wit. "The Politics of Verification." In *Verification and Arms Control*, edited by William C. Potter, 153-168. Lexington: Lexington Books, 1985.
- Lyon, Rod. "A Pillar of Salt: the Future of Nuclear Arms Control." *Australian Journal of International Affairs*, 2000: 297-308.
- Mark, Hans. "The Technological Dimension." In *Intelligence and Arms Control: A Marriage of Convenience*, edited by Thomas J. Hirschfeld, 61-76. Austin: University of Texas, 1987.
- McAllister, Brad. "Framing U.S.-Russian Security Cooperation: Neorealist and Neoliberal Alternatives to Navigating the New Security Terrain." *Demokratizatsiya*, 2007: 277-292.

- Mendelsohn, Jack. "Next Steps in Nuclear Arms Control." *Issues in Science and Technology*, 1993: 28-34.
- Newman, Andrew. "Arms Control, Proliferation and Terrorism: The Bush Administration's Post-September 11 Security Strategy." *The Journal of Strategic Studies*, 2004: 59-88.
- Nye Jr, Joseph S. "Arms Control After the Cold War." *Foreign Affairs*, 1989/1990: 42-64.
- Obama, Barack H. "The President's News Conference." *Administration of Barack H. Obama*, 2010. December 22, 2010.
- O'Neill Jr, Philip D. *Verification in an Age of Insecurity: The Future of Arms Control Compliance*. New York: Oxford University Press, Inc., 2010.
- Paine, Christopher. "The Moscow Treaty: Making matters worse." *Bulletin of Atomic Scientists*, November/December 2002: 19-21.
- Pifer, Steven. "After START: Hurdles Ahead." *Current History*, 2009: 304-310.
- Polmar, Norman. "STARTing Anew." *U.S. Naval Institute Proceedings*. February 2011.  
<https://login.cuhs1.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=58545745&site=ehost-live> (accessed February 12, 2013).
- Reagan, Ronald, and Konstantin Chernenko. *The Reagan Files*. 1984.  
<http://www.thereaganfiles.com/letters-between-president.html> (accessed May 3, 2013).

- Richelson, Jeffrey. "Technical Collection and Arms Control." In *Verification and Arms Control*, edited by William C. Potter, 169-216. Lexington: Lexington Books, 1985.
- Rosow, Walt W. "Introductory Remarks." In *Intelligence and Arms Control: A Marriage of Convenience*, edited by Thomas J. Hirschfeld, 1-8. Austin: The University of Texas, 1987.
- Rydell, Randy. "Disarmament without Agreements?" *International Negotiation*, 2005: 363-380.
- Schear, James A. "Verifying Arms Agreements: Premises, Practices, and Future Problems." In *The Verification of Arms Control Agreements*, edited by Ian Bellamy and Coit D. Blacker, 76-95. Totowa: Frank Cass & Co. Ltd., 1983.
- Shoumikhin, Andrei. "Change and Continuity in Russian Arms Control." *Comparative Strategy*, 2009: 140-153.
- Shuja, Sharif M. "Looking Forward by Looking Back: A Pragmatic Look at Nuclear Non-Proliferation, Disarmament and Arms Control." *National Observer*, 2002: 59-67.
- Sloan, Stanley R., and Robert C. Gray. *Nuclear Strategy and Arms Control*. New York: Foreign Policy Association, Inc., 1982.
- "Strategic Offensive Reductions Treaty (SORT)." *Arms Control Association*. May 24, 2002. <http://www.armscontrol.org/documents/sort> (accessed February 16, 2013).
- Talbott, Strobe. *Deadly Gambits: The Reagan Administration and the Stalemate in Nuclear Arms Control*. New York: Alfred A. Knopf, Inc., 1984.

- Terry, James P. "The 2002 Moscow Treaty: Marking a New Strategic Relationship Between the United States and Russia." *The Army Lawyer*, 2005: 5-10.
- Time. "Preview of the SALT Debate: "Killer Ammendments" ahead?" *Time*, June 18, 1979: 18.
- . "Spies in the Sky: The Fate of SALT II may depend on "verification"." *Time*, July 30, 1979: 30.
- Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms*. Treaty Document, Washinton D.C.: U.S. Government Printing Office, 2010.
- U.S. Department of State - Agreed Statements*. n.d.  
<http://www.state.gov/www/global/arms/starthtm/start/agreed.html> (accessed February 16, 2013).
- U.S. Department of State - Conversion or Elimination Protocol*. July 31, 1991.  
<http://www.state.gov/www/global/arms/starthtm/start/convpro.html> (accessed February 16, 2013).
- U.S. Department of State - Hypertext of START I Treaty*. July 31, 1991.  
<http://www.state.gov/www/global/arms/starthtm/start/start1.html> (accessed February 16, 2013).
- U.S. Department of State - Inspection Protocol*. July 31, 1991.  
<http://www.state.gov/www/global/arms/starthtm/start/insppro.html> (accessed February 16, 2013).

*U.S. Department of State - Inspections Annexes.* n.d.

<http://www.state.gov/www/global/arms/starthtm/start/inannex.html> (accessed February 16, 2013).

*U.S. Department of State - Notification Protocol.* July 31, 1991.

<http://www.state.gov/www/global/arms/starthtm/start/notfypro.html> (accessed February 16, 2013).

*U.S. Department of State - START II Treaty.* January 3, 1993.

<http://www.state.gov/www/global/arms/starthtm/start2/str2txt.html> (accessed February 17, 2013).

U.S. Department of State Dispatch. *START II Treaty.* January 4, 1993.

<https://login.cuhs1.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9302030286&site=ehost-live> (accessed October 2, 2012).

—. *US and Russia Sign START II Treaty.* January 11, 1993.

<https://login.cuhs1.creighton.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=9302030340&site=ehost-live> (accessed October 2, 2012).

United States Senate Committee on Foreign Relations Report. *Treaty with Russia on Measures for Further Reduction and Limitation of Strategic Offensive Arms (The New START Treaty)*. United States Senate Committee on Foreign Relations Report with Minority Views, Washington D.C.: U.S. Government Printing Office, 2010.

*Vienna Convention on the Law of Treaties.* Treaty, Vienna: United Nations, 1969.

Warden, John K. "After a New START." *U.S. Naval Institute Proceedings*, July 31, 2012.

<http://web.ebscohost.com.cuhs1.creighton.edu/ehost/detail?vid=3&sid=d6a36174-1c95-444b-8eb9-888df3a09859%40sessionmgr113&hid=125&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=aph&AN=77244712> (accessed February 16, 2013).

Wilkening, Dean A. "Monitoring Bombers and Cruise Missiles." In *Verification and Arms Control*, edited by William C. Potter, 107-123. Lexington: Lexington Books, 1985.