Global Zero

Through the Social Constructivist View of Alexander Wendt.

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Chapter 1: Introduction

“Global Zero is not just a slogan -- it is a tangible goal that can and must be achieved.”
- UN Secretary Ban Ki-moon

The security and defense issues in world politics have dramatically changed after the Cold War. However, as the only remaining superpower in the world, the United States (US) influence world politics still significantly. The emphasis of the US and many other nations’ national security on conventional warfare has shifted the last decade towards hybrid warfare; where terrorist attacks, cyber warfare and nuclear proliferation are part of a world with complex threats.

With the signing of the New START Treaty (NST) in Prague on the 8th of April 2010, president Obama of the US got a little step closer to the ideal of Global Zero; a world without nuclear weapons.² Global Zero is not just an American ideal; it is an international movement for the elimination of nuclear weapons. By the historical signing of the NST by Russia and the US they agreed to reduce their nuclear weapons. It could be the beginning of the end of nuclear weapons. Nonetheless there is a lot to be done and there are many grey areas in nuclear disarmament.³

Global Zero caught my attention as it is about the world’s most deadly weapons, nuclear arms, which can eliminate life on the entire planet. The fact that nuclear weapons have such eliminating power makes them a part of an interesting debate. Nuclear arms remain a grave threat to life; therefore the possibility of world nuclear disarmament must be investigated. I will investigate if Global Zero is realistic and not a too idealistic view of the world.

To examine such an interesting case as Global Zero, I need a theory that examines structures and processes, in order to investigate the possibilities change. Alexander Wendt’s theory of social constructivism offers this and is different than other conventional International Relations (IR) theories. Friedrich Kratochwil states that Wendt takes issue with the debate on structures, the different theories of system structures and reproducing issues.⁴

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² White House: http://www.whitehouse.gov/blog/2010/04/07/a-new-start
Kratochwil means by this that Wendt not only looks at international issues an sich, but at the structure and processes that are behind or underlying of those issues.

Wendt’s theory also embraces influences from these IR theories and others. It takes a middle-ground position to explain the complexity of today’s world and questions the ontology and epistemology in other theories.

Wendt’s social constructivist theory is one of the few theories in IR with a philosophical-science character, which intrigues me. With the intricacy of threats and relations in this world, this theory should be more suitable than other theories to explore the attainability of Global Zero in the international system. Global Zero is a challenging issue, as its success or failure can affect everyone all over the world. It is therefore interesting to explore how Wendt’s theory sees nuclear disarmament and Global Zero. The main-question of this study therefore is:

- How to evaluate the meaning of Global Zero in terms of the social constructivist theory of Alexander Wendt?

To evaluate the case-studies, the focus of the theory lies on structure and the possibility of change in the international system. By the usage of Wendt’s models, I can see step by step what the meaning and feasibility of the case of nuclear disarmament - which Global Zero implies - is following Wendt’s theory.

Wendt is criticized by many authors, for example Friedrich Kratochwil. He does not disagree with the theory of Wendt, but does not entirely agree with it either. He questions some elements of the theory, which I will use to filter elements of Wendt’s theory in order to better analyze case. Although he raises question marks in regard to Wendt’s theory, it should be said that Kratochwil is a constructivist likewise, therefore large parts of Wendt’s theory overlap with his opinion.

Wendt uses mainly the work of Waltz and to some extent Weber and Marx as basic elements for his theory. Especially Waltz’ theory is used as a foil for Wendt’s starting position. Criticism on those theories can be used to criticize Wendt’s basic foundation in some parts as well. On the other side, Maria Rublee’s work on social psychology, nuclear arms and international actions is of interest in support of Wendt’s theory. Wendt focuses on structure and process, trichotomy of anarchy, and cultural change. This will be explained in the following chapter. Most of these points are covered by Rublee as well, which can give to some extent weight and more practical insight to Wendt’s theory.
In order to apply Wendt’s theory to nuclear disarmament, and specifically to Global Zero, I will examine the background and developments in the history of nuclear events. Since the 1950s and beginning of the 1960s, notions and arguments on nuclear disarmament have been made. The Nuclear Non-Proliferation Treaty (NPT) was effective from 1968 on, counting now 189 country-members of the Treaty. Fifty years later in December 2008, the Global Zero campaign lifted off. The President of the United States, Barack Obama, called Global Zero one of the most important goals of his presidency.\(^5\)

On the basis of different views of this phenomenon, I will construct a wide perspective on this case. The most important thing to do is to construct an historical timeline of the road to Global Zero. I want to investigate if a change in the structure of the international regime is needed in order to accomplish Global Zero. If so, how can this be achieved?

Much information about the topic of nuclear disarmament and proliferation can be found on websites on Nuclear Security of the International Atomic Energy Agency (IAEA), SIPRI and of the United Nation’s Nuclear Non-Proliferation Treaty (NPT), which I will use to form different time-lines. All data will thereafter be interpreted through a social constructivist view in chapter 3, with the focus points elaborated in chapter 2.

In chapter 2 I will elaborate the theory of Alexander Wendt. Social constructivism will be used as a lens to answer the main question. My sub-question of chapter 2 will therefore be:

- What is structural change and when can it occur according to Wendt?

After I acquainted the reader with the theory in chapter 2, I will explore the development and process of nuclear proliferation and disarmament in chapters 3 and 4. I will do this using a historical timeline, which will give more insight on the matter of nuclear regime. The main topics of this regime will be the NPT and the IAEA. My sub-questions of chapter 3 respectively chapter 4 are:

- To what extent has the nuclear disarmament regime changed? This implies evaluating the nature of the nuclear disarmament structure.
- To what extent has the nuclear disarmament discourse changed? This implies evaluating the development of the nuclear disarmament process.

In the fifth chapter I will investigate if Global Zero is a continuation of the history or a new nuclear regime on its own. By explaining the international system through process and structure, the meaning of nuclear disarmament can be investigated and will tell if Global Zero is a new chapter in the history of the case, or just a continuation. Here I evaluate if the criteria

\(^5\) President Obama’s Prague speech, 05-04-2009
of Wendt for structural change in the nuclear process to Global Zero are present. The sub-question which will be investigated through the social constructivist view thereby is:

- What is the social constructivist view on the process of Global Zero?

The conclusion will follow in the final chapter 6: Is Global Zero a new nuclear regime and discourse or a continuation of the past?
Chapter 2: Social Theory of International Politics

Social constructivism is a theory that brings an alternative to questions in IR that dominant theories cannot answer. The theory looks more at philosophy, meaning and ontology than other theories.6 This chapter explores the theory of Alexander Wendt “Social Theory of International Politics”. What does it say and how does it evaluate the nuclear disarmament regime and discourse? In this chapter, the theory will be explained, but it will not be a summary. Instead, I will select elements of the theory in order to apply them to the nuclear disarmament regime and Global Zero. This theory will function as social constructivist “lens” to view the discourse and regime of world nuclear disarmament.

Because I want to explain the structure and process of the nuclear regime and see to what degree it has changed, the passages on structural change and process of Wendt’s theory are of most importance. There Wendt treats process and structure of the state and the states system, which has the important focus for answering the main question. The sub-question of this chapter is: What is structural change and when can it occur according to Wendt? I will first explain the core of Social Constructivism of Alexander Wendt in order to get the base for later on where a deeper focus on models of change will lay.

2.1 Structure, Knowledge and Process

Wendt argues that the structure of any social system exists out of three elements: interests, material conditions and ideas.7 He bases his theory on parts of Waltz’ theory, however Kratochwil states that Wendt’s theory has a wider perspective. Wendt’s approach is more cognitive, systemic and interactionist, according to Kratochwil.8 Wendt says that the ideational aspect of social knowledge is a “distribution of knowledge”. This refers to any belief an actor takes to be true about idea.9 Wendt takes the stand that there are two forms of knowledge: private or shared. When states interact with each other, the private knowledge of each state becomes a distribution of knowledge that can emerge certain effects.10 This means that states will anticipate on each others decisions and political choices.

Shared knowledge seems to me the core of social regime as it founds collective meaning and actions towards a policy. Maria Rublee states that social psychology is of grave

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7 A. Wendt, Social Theory of International Politics, p. 139
8 F. Kratochwil, ‘Constructing a New Orthodoxy’, p. 27
9 A. Wendt, Social Theory of International Politics, p. 140
10 A. Wendt, Social Theory of International Politics, p. 141
importance for policy making and outcome.\textsuperscript{11} I will elaborate more on her theory later on, as it has many parallels with Wendt’s social theory and strengthens it.

Wendt argues that the potential for structural change is based on process.\textsuperscript{12} Wendt is concerned not by the structure of states, but by the structure of the state system. He explains that the micro-level is the interaction of the world from an agent’s point of view, where macro-structures depict the world from the standpoint of the system.\textsuperscript{13} Multiple realizability plays a large part in theorizing the problems of those micro and macro levels, but the real answer must be found in “supervenience”. This term summarizes the relationship between both structure levels: “it describes a non-causal, non-reductive relationship of ontological dependency of one class fact on another”.\textsuperscript{14} In regard to culture, common knowledge and belief, it is interesting to see that he notes that interest and identities got formed by the process of socialization.\textsuperscript{15} So, process is key in understanding structural change.

Knowledge of unobservable entities or structures is the element which distinguishes “scientific” realists such as Wendt from other realists. The problem with unobservables is that they depend much more on theory than on our senses, so if we abandon a theory which founds the knowledge of an unobservable, the knowledge vanishes.

Wendt goes farther than that and states that social structures are always in process and social processes are always structured. This seems to me a vicious circle, as structural change is based on process, where structures are in process, and process is structured. He claims however that culture is a self-fulfilling prophecy by the way individuals interact in situations based on socially shared knowledge, beliefs and our ‘prophecies’ about the situation. To define the situation, actors use their own identities and interests, and what they think others will do.

What is important to comprehend in Wendt’s theory is that culture matters and is based on actors’ own identities and beliefs, and that what the actor thinks others have. Most important for the application of this part of the theory into practice are social knowledge and interaction. Wendt explains that the effects of such a structure depend on the shared knowledge, projection of identification and the relations between states. I will explain this relationship in 2.3.

\textsuperscript{11} Maria Rost Rublee, \textit{Nonproliferation Norms. Why States Choose Nuclear Restraint}, The University of Georgia Press (2009), p. 16
\textsuperscript{12} A. Wendt, \textit{Social Theory of International Politics}, p. 145
\textsuperscript{13} A. Wendt, \textit{Social Theory of International Politics}, p. 147
\textsuperscript{14} A. Wendt, \textit{Social Theory of International Politics}, p. 156
\textsuperscript{15} A. Wendt, \textit{Social Theory of International Politics}, p. 170
2.2 The State and Identity

Wendt has the notion that everyone anthropomorphizes the state and because of that common sense about the state, realities of the international system are constituted. He thereby explains that states have their identities like people have, and therefore such same relations, actions and meaning. Wendt claims that social kinds like states are not constituted by what they are called, but how they are organized. With this last statement he contradicts himself, as he always claims that something is what people make of it. Nonetheless the way things are organized can be seen as relations and identities, in that way it is what people make of it.

Identities that can be attributed by states need to be identified, where Wendt discusses four types of identities: personal or corporate; type; role; and collective. Those definitions and typologies are useful as well when looking at the identities of the major players in the system involved in nuclear disarmament. When looking at the different identities of states and the states system, the collective in which they are involved, friends and enemies, and the system which will probably differ historically and culturally, it could help determine if there is a continuation or change in the nuclear discourse. The different anarchies, which will be explained later on can be formed or characterized by these identities.

The case of nuclear disarmament is more focused on the state system as a whole instead of individual states. However, I will take national interests into account as they determine for a great part the decision makers’ actions. I think national security is the core of decisions, as it can determine the existence of the state. Wendt argues on this subject that there are four forms of national interest: physical survival, autonomy, economic well-being, and collective self-esteem. They all are based on security. Because of the homeostatic structure of state, they are interested in reproducing themselves and therefore will endure over time. National interest and security are the core in state survival, which will have grave influence when looking at decisions made about nuclear disarmament and proliferation. The decisions made in the nuclear regime are linked to national security; therefore national interest has to be taking into account.

In the next sections two of Wendt’s models will be explained. These models help me with the application of the theory to practice. The first model explores the multiple realization

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16 A. Wendt, Social Theory of International Politics, p. 195-196
17 A. Wendt, Social Theory of International Politics, p. 214
18 A. Wendt, Social Theory of International Politics, p. 224-233
19 A. Wendt, Social Theory of International Politics, p. 235-238
20 A. Wendt, Social Theory of International Politics, p. 238
of international culture, which can explore where the nuclear regime/discourse was and will be in a certain time.

2.3 Model 1: Multiple Realization of International Culture

International connections as well as states dependency on other states and the reaction to each other (or interaction) seem to play a key role in nuclear disarmament. Wendt states that the structure of international politics can be shown through a holistic approach. He states that “political culture is the most fundamental fact about the structure of an international system, giving meaning to power and content to interests …”.21 The structure has an absence of centralized authority, defined as anarchy. He goes further than other theories, and states that anarchy can have more structures, and therefore anarchy is not following one “logic” only.22

At the macro-level, there are three structures that can dominate the system: Hobbesian/enemy, Lockean/rival, and Kantian/friend.23 Wendt brings in different arguments of the different logics of anarchy. It will differ if the system is made out of respectively revisionist states, status quo states or collectivist states.24 Wendt elaborates thereby on the “Problem of Other Minds” which is a form of a self-fulfilling prophecy, because actors act on the beliefs they have about others, which effect the actions and tend to reproduce those beliefs.25 This “Problem of Other Minds” implying action/reaction determines in which anarchy the states system is. Although the process of learning through history is an important part here as well, history matters while forming thoughts on other actors.26

If I apply these three structures to the process and development of nuclear disarmament, it can be made clear in what state of anarchy the world in case of nuclear disarmament was, is and is going to be. Wendt also states that fear and anxiety are socially constructed which is necessary to work with; the driving force of social evolution is the things we want material forces for such as fears, ambitions and hopes.27

Wendt states that anarchic structures do construct their elements, and these structures vary at the macro-level; therefore have multiple logics.28 The culture of an international system is based on a structure of roles.29 It is all about the quality/nature of the shared ideas. It

21 A. Wendt, Social Theory of International Politics, p. 250
22 A. Wendt, Social Theory of International Politics, p. 246
23 A. Wendt, Social Theory of International Politics, p. 246-247
24 A. Wendt, Social Theory of International Politics, p. 106-107
25 A. Wendt, Social Theory of International Politics, p. 107-108
26 A. Wendt, Social Theory of International Politics, p. 109
27 A. Wendt, Social Theory of International Politics, p. 113
28 A. Wendt, Social Theory of International Politics, p. 248-249
29 A. Wendt, Social Theory of International Politics, p. 251
differs if they are cooperative or conflictive, but in a way they are quite the same. The difference lay in the perceived relationship. The nuclear weapons of France are not the same threat to the US than one nuclear weapon of Iran. The forces of destruction get meaning by the relations of destruction in which they are embedded. The pivot here is the shared ideas that structure violence between states.  

2.3.1. The Axes of the Multiple Realization of International Culture Model
The model of multiple realization of international culture can clarify the nuclear regime, as the changes or non-changes in culture should be seen in the model. This model has two axes: the Degree of Cultural Internationalization and the Degree of Society. Whereas cultural change is structural change according to Wendt, this model is very interesting for exploring the structural change of the nuclear regime. When examining the possibility of structural change, changes in culture are according to Wendt the same.

The vertical axis, the Degree of cultural internalization, is based on assumptions of the cultural norms: force, prize and legitimacy. Violence and relations of destruction are important terms in this argument, where shared ideas structure violence between states, whether cooperative or in conflict. Wendt explains that the three different Degrees of internalizations of obeying cultural norms are: Neo-Realist coercion (forced to do something), Neo-Liberalist price (doing it out self-interest), and Constructivist legitimacy (doing it because it is considered legitimate). He calls it respectively the 1st, 2nd and 3rd Degree of cultural internalization. This can be applied to all three anarchies and has different outcomes in the ways the cultures constituted an interest in internalization degrees.

Those anarchies (Hobbesian, Lockean, and Kantian) are represented on the horizontal axis: the Degree of Society, or cooperation. The key aspect is role structure in the case of any cultural form. The Self and Other play a big part in the destructive relations and the use of violence, and constitute the roles and meaning in multiple ways at the micro-level.

Kratochwil states, however, that the forces of destruction cannot be conceptualized without organisation and social cooperation. Kratochwil argues that Wendt falls into the Hobbesian trap. War is after all a social phenomenon which cannot serve as the foundation of

30 A. Wendt, Social Theory of International Politics, p. 255
31 A. Wendt, Social Theory of International Politics, p. 314
32 A. Wendt, Social Theory of International Politics, p. 250
33 A. Wendt, Social Theory of International Politics, p. 251-255
34 A. Wendt, Social Theory of International Politics, p. 254
35 A. Wendt, Social Theory of International Politics, p. 256-258
all politics consequently. The Hobbesian anarchy is, however, for me more a concept and tool for analysis and not the foundation of all politics. In order to apply the different forms of anarchy, the three types will be explained below.

2.3.2. The Hobbesian Anarchy
When the enmity-role dominates a system, there is war of all against all. Wendt argues however that in this Hobbesian culture the state of war is not constituted by anarchy or human nature, but by shared ideas. How the Self and Other are represented will tell a great deal of what is going on in a social system. Enmity is the key word in Hobbesian anarchy, the violence in a state of nature can only be controlled by an external constraint, a Leviathan. The representations of the Other as intent on destroying the Self are of basic importance in the thought of Hobbesian anarchy. It does not matter if actors think that the enemies are real or imagined, as long as they are real in their consequences, it is an enemy.

In this anarchy, when the Other is an enemy, the Self will be forced to mirror back what it has attributed to the Other in order to survive. This is basically different than the functionally counter-roles (teacher-student), because the role is now symmetric and therefore a self-fulfilling prophecy. When more members of a system represent themselves as an enemy, the particular Other becomes the “generalized” Other. The actors will know interact because of the knowledge about their roles in stead of based on what they really know about each other. The logic of Hobbesian anarchy is a self-help system, where survival depends on military power solely, and security is zero-sum. When looking at the tendencies, its characteristics are endemic violence, high rate of destruction, little room for neutrality, and isomorphic tendencies among units. Wendt argues that in Hobbesian anarchy it is possible to have no culture at all, because knowledge is private and almost never shared. Therefore, ideas are not shared and do so not form a culture. This seems somehow contradicting as Wendt states, as mentioned above, that war is constituted by shared ideas. Wendt is not very clear at this point. I will not take it into account, as it is more important to get the general idea of the differences between the types of anarchies than explore them all deeply. Let me, for now, turn back and elaborate on the Lockean anarchy.

36 F. Kratochwil, ‘Constructing a New Orthodoxy’, p. 29
37 A. Wendt, *Social Theory of International Politics*, p. 260-261
38 A. Wendt, *Social Theory of International Politics*, p. 260-266
39 A. Wendt, *Social Theory of International Politics*, p. 266-267
2.3.3. The Lockean Anarchy

The Lockean culture is characterized by the role of rivalry. Key words are sovereignty, rule of law, status quo, live and let live. Violence can still be used to settle a dispute, but this will always be so in restraining limits of the respect for life. Rivals will limit their own violence with regard to the Other, although relative military power is still of importance. There is a relationship of subjective beliefs about the Self and the Other, and rivalry; if they change, so does rivalry.\(^{40}\) When looking at the tendencies of acceptance of warfare, membership of warfare, balancing power and neutrality; it varies a lot from the Hobbesian anarchy because of the characteristic mutual recognition of sovereignty, and live and let live. The best example of a Lockean anarchy is the Westphalian system.\(^{41}\)

In explaining the Third Degree in relation with the Lockean anarchy and sovereignty, Wendt uses the “Foucault Effect” in elaborating on effects of this Degree. The “Foucault Effect” is a “thesis that claims that the self-regulating, possessive individual is an effect of a particular discourse or culture”.\(^{42}\) This effect could be very interesting if this could be bent towards states in the states system when thinking of the nuclear discourse, which can be done in the Lockean culture which individualizes states in different ways. What is if importance is that a fully internalized Lockean culture gives its members an expanded sense of the Self that includes the group and each will be willing, to some limits, to come to each other’s aid.\(^{43}\) So, a mutual goal can get reached, as states listen and interact in this type of anarchy.

2.3.4. The Kantian Anarchy

The last form of anarchy that Wendt distinguishes is the Kantian culture, where non-violence, friendship, mutual aid and team play are the norm. Friendship is the role structure of this culture and concerns national security as solely issue area. Pluralistic- and collective security community are of great importance in the Kantian anarchy, as it differs friends from allies. It can explain the change over time from rival to friend, which is in the case of nuclear disarmament very interesting.\(^{44}\) Wendt argues in the part of internalization that the First Degree; coercion, is very difficult to put next to a Kantian culture. Even so, he argues that this can be done in two cases: by environmental collapse or a nuclear war. It is good to see that

\(^{40}\) A. Wendt, *Social Theory of International Politics*, p. 279-283
\(^{41}\) A. Wendt, *Social Theory of International Politics*, p. 284-289
\(^{42}\) A. Wendt, *Social Theory of International Politics*, p. 290
\(^{43}\) A. Wendt, *Social Theory of International Politics*, p. 291-294
\(^{44}\) A. Wendt, *Social Theory of International Politics*, p. 300-302
following Wendt’s argument, the case of nuclear proliferation could be applied to all the nine different cells in the model of international culture.

2.3.5. Change in International Culture

Wendt argues that the vertical axis with respect to cultural internalization will become more intense over time. (The position of the mark in which cell the world is in the Multiple Realization of International Culture Model, will move upwards from First, to Second, to the Third Degree). The horizontal axis of the Degree of society representing the three anarchies does not necessarily have a relationship with time towards a “higher” form of anarchy. Wendt does state nonetheless that it is not likely to move backwards from Kantian to Lockean to Hobbesian. But, one can debate which anarchy the ‘starting’ point is in time, and in which cell the Western world is now at present time, especially within the case of nuclear disarmament. As the three distinct macro-level structures of Hobbesian, Lockean and Kantian are explained above, the next model will elaborate on social learning and the connection of states by evolution.

2.4 Model 2: The Evolutionary Model

The other model that is practical to apply to an international issue is the evolutionary model. The evolutionary model looks at the representational practice that produces enemies, rivals and friends. Here, identities are also learned centers on the mechanism of reflected appraisals. Wendt states that structures and agents are processes and in an on-going matter. As stated earlier, Wendt’s structural change means cultural change, by this he makes sure that the deep structure of international politics was in a process of change in history when looking at the cultures. This is an important step in this model too, as culture is linked to structural change. I will first explore some key aspects of both models, before I elaborate on the evolutionary model.

2.4.1. Imitation and Social Learning

Imitation is one of the general aspects of Wendt’s social theory. Imitation must be successful and create a more homogeneous population. The interest and ideas that are acquired by imitation can be successful in a material or in a way of status success. The mechanism of

45 A. Wendt, Social Theory of International Politics, p. 308-312
46 A. Wendt, Social Theory of International Politics, p. 313-314
evolution runs much faster by imitation than natural selection. This is interesting to see, as I will focus on the states in different time-frames and look if there is an imitation-process before a possible change in action in the nuclear case.

Social learning, another key aspect, is explained through an interactionist framework which is based on Mead’s identity theory. Identities and interest are learned and they are reinforced by interaction of the actors. In social learning, the role-taking and altercasting of the Self toward the Other is of great importance. By the example of a first encounter between Ego and Alter, one can see the self-fulfilling prophecy of mirroring: Ego shall anticipate others’ reaction to the Self. Power relations are key in this example, as power is context-specific and has an ability to pursue interaction where the Other does not learn, through the fear or use of power. It is however important to keep in mind that Ego and Alter jointly defining each other in each stage of interaction.

It is interesting how this can be applied to states and the states system, where interaction and defining positions can explain actions in different situations. The relationship between states and the projection of actions and thoughts of the Other to the Self are crucial in determining outcomes. By using social learning based on Mead and imitation integrated in both models, I can see if states were taking part in socialization in the nuclear process.

2.4.2. Collective Identity

Collective identity is an aspect that plays a major role in both models. Here, identity is a central concept in constructivism. However, as Maja Zehfuss argues, it is this same notion of identity that threatens to undermine the possibility of social constructivism. By using anarchy and Wendt’s thoughts that it is ‘what states make of it’, Wendt can not support his other part of his theory of scientific theory that states are given according to Zehfuss. Still, identity and states as a given can be treated next to each other, as it refer to different levels of thought. On one hand Wendt explains the origins of states, and on the other hand needs to treat states as given in order to explain other phenomena.

Collective identity however differs from what Zehfuss stated above. Collective identity gives actors interest in the preservation of their group. The welfare of the group

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47 A. Wendt, Social Theory of International Politics, p. 325-326
48 A. Wendt, Social Theory of International Politics, p. 327
49 A. Wendt, Social Theory of International Politics, p. 327-336
50 Maja Zehfuss, author on Constructivist issues [strange footnote]
becomes an end in itself; however there are limits to this welfare. Collective identities are relationship specific, issue specific, and there will always be a tension between the collective and egoistic identities.\textsuperscript{52} A change in collective identity will also involve a change in structure, where the latter supervene the former because of the macro-level to micro-level change.\textsuperscript{53} Collective identity change is therefore important to observe, as it can lead to structural change.

Wendt argues that he shapes his models in a trans-historical and trans-cultural way in order to be applicable. He also points out that the Lockean culture is the starting point and the focus thereby must lie on how it can become a Kantian culture. He claims that the Hobbesian culture is escaped some years ago and turned into a Lockean.\textsuperscript{54} However, Wendt does not give a clear example why and how. I think in some regions of the world it is still very similar to the Hobbesian anarchy though.

This section makes it clear that ideas and meaning are socially constructed, and interaction and subjectivity are of grave importance in the decision making process. Because states are taking the actions and thoughts of others into account, states are very interdependent. This is interesting especially when you look at the case of nuclear disarmament and the different regions and various levels in world politics. Collective identity change and process can explain a change in structure, which can be applied to the nuclear process. Collective identity change and development can be of great use in investigating the process of the nuclear discourse and regime as collective identity can create change in structure.

2.4.3. Master-variables of the Evolutionary Model

The four mechanisms or “master variables” will be examined as they explain the Lockean world and collective identity formation.\textsuperscript{55} The variables do not emphasize the egoistic identities but help create collective ones. These “master variables” are: interdependence, common fate, homogeneity, and self-restraint, where the latter is a permissive cause and the former three efficient causes. Wendt argues that the latter in combination with an efficient cause will be necessary for the occurrence of collective identity formation.\textsuperscript{56} Collective

\textsuperscript{52} A. Wendt, \textit{Social Theory of International Politics}, p. 337
\textsuperscript{53} A. Wendt, \textit{Social Theory of International Politics}, p. 338
\textsuperscript{54} A. Wendt, \textit{Social Theory of International Politics}, p. 338-339
\textsuperscript{55} A. Wendt, \textit{Social Theory of International Politics}, p. 341-342
\textsuperscript{56} A. Wendt, \textit{Social Theory of International Politics}, p. 343
identity will be affected by the density of interaction, as reflected appraisals have faster and
deeper effects on identity when the dependency of actors rises.57

The reason that there always needs to be a permissive cause to an efficient cause, is
that actors fear of being engulfed by the Other, and therefore will need the belief of self-
restraint by the (cooperating) Other.58 It is about respecting each other’s differences and
making room for the Other to identify with the Self. Wendt states that the problem of trust is
traditionally solved by the external constraint of a third party. He claims that under Mutual
Assured Destruction (MAD) of nuclear weapons, states are willing to trust each other and take
on a collective identity.59 When there is no third party restraint, self-restraint by trusting the
Other based on shared knowledge is the key, it is the basis for collective identity formation.
This is a very important statement when evaluating the process of nuclear regime and
discourse.

To the question “how” actors generate knowledge to gain trust for self-restraint,
Wendt gives three causes/learning paths for the actors: internalizing institutions of the
pluralistic security community to the Third Degree, transposing domestic ways in foreign
policy behavior, and self-binding; imposing visible sacrifices on oneself.60 It is, however to
keep in mind that this all takes place against a cultural background. I will not elaborate further
on these causes, however they are four important variables for this model and therefore
essential for the practical application to the case.

2.5. Linking Theory and Case

Making the link between theory and Global Zero, the theory Rublee is of great use. Maria
Rost Rublee writes about constructivism and the importance of social psychology while
looking at state behaviour and nuclear disarmament. As well as Wendt, she is in favour of the
middle-ground view of constructivism while adding social psychology to it. As for nuclear
disarmament, she is fascinated by the fact that 95% of the countries in the world do not
proliferate with five countries even backing out of the nuclear scene. This is very valuable in
discussing the possibility of Global Zero. One of her most important questions where she
based her writings on is how states conceptualize the value of nuclear weapons.61 She applied

57 A. Wendt, *Social Theory of International Politics*, p. 347
58 A. Wendt, *Social Theory of International Politics*, p. 343-363
59 A. Wendt, *Social Theory of International Politics*, p. 358
60 A. Wendt, *Social Theory of International Politics*, p. 360-363
her framework to five countries that opted out off the nuclear arms race: Japan, Germany, Egypt, Libya, and Sweden.

Rublee argues that the constructivist argument or idea-centred argument in the case of nuclear disarmament is useful, but not complete. She states by using Hymans’ constructivist argument on nuclear fear that the factual (states still developed nuclear weapons in the absence of a direct nuclear threat) is missing. In this argument there are three dynamics in the expectations of constructivism and nuclear behaviour: persuasion, social conformity and identification. She takes the expectations of Realism and Neo-Liberalism also into account however. Her research shows that when applying those expectations to nuclear decision-making, the expectations of constructivism pass while the expectations of the others fail.

**Conclusion**

In this chapter, I have explained the theory of Alexander Wendt in order to answer the question: What is structural change and when can it occur, according to Wendt? The criteria to evaluate the process of structural change are needed in order to apply it to the nuclear regime and Global Zero. Wendt’s social constructivism has many facets, but they mainly relate to process and structure of the international system. The structure of any social system exists out of three elements: interests, material conditions and ideas. It is hereby important to understand how this theory is constructed on a philosophical base. To see the criteria, according to Wendt, the possibility of a process of change can be traced by using two models: the model of multiple realization and the evolutionary model. Structural change is possible through exploring cultural change, which can by investigated by using the two models.

The sections about state identity, imitation, social learning and collective identity explain the line of thought of Wendt about his two models. The models will be used after the nuclear disarmament regime and discourse will be discussed in their basics. These two models will be applied to the regime and discourse to compare and evaluate which components are similar and which are different. Based on the information of the process of nuclear disarmament regime and discourse, the models offer more insight on the meaning and possibilities of Global Zero. By exploring the variables of the models in the case of the Global Zero process it will investigate if there is such a change of structure in the case of the nuclear practice.

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63 M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p. 27
Wendt argues that there are four forms of national interest (physical survival, autonomy, economic well-being, and collective self-esteem) because states are interested in reproducing themselves and therefore will endure over time. At the other side, the macro-level, there can be three anarchies: Hobbesian enmity, Lockean rivalry, or Kantian friend. The anarchic structures construct their elements, and these structures vary at the macro-level; therefore have multiple logics. The model of multiple realization of international culture gets its shape there.

Wendt puts great emphasis on the different logics of anarchy in this model. The differences depend on if the system is made out of revisionist states, status quo states or collectivist states. Here he draws attention to the “Problem of Other Minds” which is a form of a self-fulfilling prophecy; because actors act on the beliefs they have about others, which effect the actions and tend to reproduce those beliefs. The projection of the Self towards the Other, and intersubjectivity is a core understanding of social constructivism. The Degree of Society is one of the axes of this model, where the Degree of Cultural Internalization is the other. Those Degrees evolve upwards in time.

Structural change has its foundation in process. This will make process a pillar in this investigation. He also states that structural change is cultural change. The model of multiple realization of international culture is therefore of great importance to investigate change. The evolutionary model, however, explains the process of change as well, using key terms as imitation, social learning and collective identity. The four master variables can explain the shift that actors make and change in process and structure. This deepens the model of multiple realization of international culture and explains change in structure. By investigating which elements of the models are there in the nuclear disarmament regime and discourse, change can be evaluated.

The standpoint that structural change is cultural change needs to be taken into account while assessing cultural influence in the regime/discourse of nuclear disarmament. Maria Rublee supports Wendt’s theory because she looks at certain behaviour of citizens towards outcomes of politics, and than if a regime can change or that it stays in tact. Applying this, instead of citizens, to states it can be applied to the nuclear policy. Linking, consistency and activation are key-variables of Rublee’s theory as they determine the reaction towards nuclear policy. She takes norms into account and therefore the meaning that people give to outcomes
or as input for policy. As the meaning of Global Zero is investigated through a social-constructivist view, Rublee’s theory will support Wendt’s theory.

The case of nuclear disarmament will be presented in the following chapters. The next chapter will look specifically at the process of the nuclear disarmament regime and the nuclear disarmament discourse, as process needs to be evaluated in order to look at the possibility of change.

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Chapter 3: Evaluating the Nuclear Disarmament Regime

The focus of this chapter is on the process and structure of the nuclear disarmament regime. The developments and side-effects will be taken into account to create a complete picture of the nuclear disarmament regime. I will do this, in order to find out if there is change or just continuation. I will first explore the international nuclear regime, and examine if it has changed over time. I will give an historic overview of the development of the international nuclear regime. Hereafter I will give an overview through the social constructivist lens of Wendt. The international nuclear regime is build up by many treaties on nuclear proliferation and development. The most significant treaty is the Nuclear Non-Proliferation Treaty (NPT), which was constructed to prevent the original five nuclear states from proliferating nuclear weapons, but which now has the signatures of 189 countries.66

Rublee argued that nuclear non-proliferation is shaped in no small measure by the NPT and related agreements and treaties. She states that the non-proliferation regime is nevertheless more that just the NPT; it is a whole interlocking network of agreements and actions.67 She says that the norm of nuclear non-proliferation is very strong. This strong norm shows as it is not merely the regime that drives states to act, but states that are driving to strengthen the regime and even other states outside the nuclear regime.68

In this chapter, the evaluation of the nature of the nuclear disarmament regime in its whole (nuclear non-proliferation, nuclear proliferation, treaties, agreements etc.) will consist largely out of the developments and effects of and around the NPT, and its nuclear watchdog the International Atomic Energy Agency (IAEA). It will be evaluated until the start of the Global Zero movement in 2009. It is based on sources such as the IAEA website, the NPT itself, the Atomic Bulletin, Stockholm International Peace Research Institute (SIPRI) documents, among others.

3.1. The Nuclear Disarmament Regime

To investigate this regime, I first must define what the nuclear disarmament regime means. Stephen Krasner defines international regimes as "principles, norms, rules, and decision-making procedures around which actors expectations converge in a given issue-area".69 The

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nuclear regime can hereby be seen as the whole of different treaties and agreements made about nuclear proliferation norms and disarmament procedures around the world.

The process of the nuclear disarmament regime will be analyzed by an historical timeline based primarily on information from the articles and websites of Atomic Archive, the Arms Control Association and the Bulletin for Atomic Scientists.70

3.1.1. Nuclear Suppliers Group

The nuclear disarmament regime is build up out of treaties and agreements. According to Verdier, the entire nuclear regime is divided into two groups: states that belong to the nuclear cartel and non-nuclear weapon states.71 Wheeler concludes somewhat the same, that there is a great difference of interpretation and actions between the nuclear weapon states (NWS) and the non-nuclear weapon states (NNWS).72

Initially the nuclear cartel group contained the US, SU, Britain, France and China. The first three countries incorporated the exporters of nuclear fuel and technology within the Nuclear Suppliers Group (NSG). So if non-nuclear states wanted to have nuclear technology or fuel, they had to grant the preferences of the nuclear cartel.73 When the NSG was established in 1975, it included the nuclear cartel group extended with Germany, Japan, and Canada, and has been since expanded to include thirty-eight more countries.74 Both the US and the SU/Russia are in this group because it controls the distribution of nuclear technology and fuel, therefore it was a logic step to have more influence in the nuclear and non-nuclear states. They created the NSG this to enforce the NPT, and as a result the non-nuclear states accepted the nuclear cartel’s inclinations. The effect of this embrace of preferences of the NSG by the non-nuclear states blurred somewhat the line between the different roles in the nuclear regime.75

The nuclear disarmament regime intends to prevent non-nuclear countries from pursuing nuclear arms. By giving them only access to future scientific nuclear technology if they do not pursue nuclear arms, they tend to keep the control and pressure high. Also, the NPT supplies access to the technological by-products and scientific spin-offs, free of

73 D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 442
74 D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 442
75 D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 441-442
development and research costs against the production price for signatory states. If a country would not participate, the outcome is that the status of the non-member state will be worse by blocking access fissionable material and nuclear material for peaceful means. A last component is access of the member-states to the reports of the IAEA, which would prevent cheating. Although the IAEA reports can never be fully complete, which will be explained later on at the IAEA section in this chapter, cheating is threatened by the treaty by referring to the UNSC signatories, which will be seen in breach of compliance.\footnote{D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 442-443}

3.1.2. Nuclear Programs

The US nuclear umbrella was aggrandized by the North Atlantic Treaty Organization (NATO) to Canada and the European allies. This move seemed to remove the need for indigenous nuclear weapons programs, although France and the UK remained nuclear states on their own.\footnote{D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 443} However, the security guarantees by the new Russian government in 1991 evoked the acceleration of nuclear programs in North Korea conversely.\footnote{D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 443} Nonetheless, many states as Iran and Iraq do not expand their nuclear programs because of the “big powers” US/SU, but they are securing themselves against each other.

The proliferation in the ‘second nuclear age’, with the characteristic of horizontal proliferation instead of vertical proliferation of the first nuclear age, can be evoked by one or two states particularly within unstable regions such as East Asia or the Middle East.\footnote{Francis J. Gavin, ‘Same as it ever was: Nuclear Alarmism, Proliferation, and the Cold War’, \textit{International Security}, Vol. 34, No. 3, (2009-2010) p. 12} The cause of this proliferation lies with the governments that previously eschewed nuclear weapons to reconsider their decision because of the proliferation in such ‘rogue states’. For example, if North Korea does not eliminate their nuclear program, Taiwan, Japan, and South Korea, could decide that they feel little choice but to develop a nuclear capability. This could be followed by Australia, Indonesia, and Malaysia. The same can be said about a nuclear Iran, this might drive Egypt, Turkey and Saudi Arabia into the nuclear club.\footnote{F.J. Gavin, ‘Same as it ever was: Nuclear Alarmism, Proliferation, and the Cold War’, p. 12} Proliferation leads to more proliferation according to Verdier. On the other side, when following Rublee's reasoning; there are not that many nuclear states in the world, “why don’t we have much more nuclear states?”.\footnote{M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p.1}
The theory of Verdier could explain an acceleration of nuclear programs. He sees a correlation between the senses of insecurity by a country which also may reflect the neighbour’s type of regime. He builds his findings on literature of war and democracy and he proposes that a country gets a greater sense of security when being in the neighbourhood of democracies than if the country was surrounded with autocracies. He approaches the local arms race as a prisoner’s dilemma which suggests that the worst possible outcome is for one side giving up unilaterally nuclear weapons, and on the other side the countries with the advantage in not doing so. His model suggests that a country is making the decision of joining the NPT regime is not unilaterally, but in coordination with its neighbours. He finds prove of this looking also at the logic in joining the NPT in Western Europe and in the Southern tip of South-Africa. Academic analysts of in public discussions and their participants state that there is a nuclear proliferation regime. According to some authors this international regime is the cause of rather limited proliferation of nuclear weapons since the 1960s. This view, however, is criticized by many others, including Brzoska. He states that the problem with the international regime approach is that it is not very clear on who is ‘in’ and who is ‘out’ of regimes. Especially in the area of non-proliferation the distinction is difficult by a multitude of agreements and treaties. The treaties below are selected because they have great influence on the nuclear regime by way of the amount of ratifications and their verification processes.

3.2. The NPT

“Forty years after the Nuclear Non-Proliferation Treaty entered into force, we have come together to answer a simple question with consequences for us all: as individual nations and as an international community, will we uphold the rights and responsibilities of all nations in order to prevent the spread of nuclear weapons?”

The Nuclear Non-Proliferation Treaty came to life after years of discussions and debates on nuclear non-proliferation. During the 1960s, the NPT was designed and it was ratified in 1970. However, in 1959 the General Assembly of the United Nations (UNGA) had already diagnosed that international tension and difficulties in attainment of arms agreements

82 D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 457
83 D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 458
84 D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 458
would result in a growing number of nuclear states.\footnote{James E. Dougherty, ‘The Non-Proliferation Treaty’, \textit{Russian Review}, Vol. 25, No. 1 (Jan., 1966) p. 10} During the Geneva talks in 1965, the US came with a significant draft of a non-proliferation treaty. It would prevent nuclear states to trade in nuclear weapons or provide nuclear weapons to non-nuclear states. By signing the treaty the states guaranteed that they would cooperate with the International Atomic Energy Agency which would act as a watchdog to safeguard peaceful nuclear activities.\footnote{J.E. Dougherty, ‘The Non-Proliferation Treaty’, p. 11-12} In 1968, the treaty that would prevent the proliferation of nuclear weapons, the peaceful use of nuclear energy and further nuclear disarmament as goal was finally agreed upon.\footnote{NPT background information; http://www.un.org/en/conf/npt/2005/background.html}

The new elements of this treaty are the clear language on the danger of nuclear weapons, the requirement of adherence of governments and a review conference after a specified number of years.\footnote{J.E. Dougherty, ‘The Non-Proliferation Treaty’, p. 12} Article IV of the NPT raises some questions about the restrictions and the attainment of the NNWS’ ‘inherent right’. The article includes the use, research, and production of nuclear energy for peaceful purposes without discrimination, which can be seen as an ‘inherent’ right.\footnote{Rebecca Johnson, ‘Rethinking the NPT’s role in security: 2010 and beyond’, \textit{International Affairs}, Vol. 86, No. 2 (2010) p p. 436-437} Especially article V and VI focus essentially on the elimination of nuclear weapons and aggravated clauses of withdrawal as article V promises nuclear technology when stopping the development of nuclear weapons, and article VI forcing the powers to work toward an elimination of all nuclear weapons.\footnote{Stephen M. Younger, \textit{The Bomb. A New History}, Ecco (2009) p. 138} The nuclear weapon states also pledge by these articles to abolish their own arsenals when political conditions allowed for it. However, the Permanent Five (P5) of the UN Security Council has no exact timeline to eliminate all the nuclear weapons.\footnote{S.M. Younger, \textit{The Bomb. A New History}, p. 48: the P5: China, US, Russia, UK, France}

Critique from the Realist side insists that the NPT is not a disarmament treaty, and is weakened by claims that it is. It can be seen as a treaty that is not above all on complete nuclear disarmament. When seen from the standpoint of NNWS however, it is still a disarmament treaty. Non-proliferation can be seen as disarmament, but just with a different name. Non-proliferation and disarmament can be both seen as holding states permanently in their nuclear unarmed condition. This condition must be entered under international law, through sovereign decisions to relinquish nuclear weapons.\footnote{William Walker, ‘International Nuclear Order: a Rejoinder’, \textit{International Affairs}, Vol. 83, No.4, 2007, p. 752}

The non-proliferation norm has legitimacy and meaning, but this would be nonetheless difficult if its grounding in disarmament is denied. It is such a difficult matter precisely

\begin{itemize}
\item \footnote{J.E. Dougherty, ‘The Non-Proliferation Treaty’, p. 11-12}
\item \footnote{NPT background information; http://www.un.org/en/conf/npt/2005/background.html}
\item \footnote{J.E. Dougherty, ‘The Non-Proliferation Treaty’, p. 12}
\item \footnote{Rebecca Johnson, ‘Rethinking the NPT’s role in security: 2010 and beyond’, \textit{International Affairs}, Vol. 86, No. 2 (2010) p p. 436-437}
\item \footnote{Stephen M. Younger, \textit{The Bomb. A New History}, Ecco (2009) p. 138}
\item \footnote{S.M. Younger, \textit{The Bomb. A New History}, p. 48: the P5: China, US, Russia, UK, France}
\end{itemize}
because the NPT is a disarmament treaty, according to Walker. The NPT and its Conferences can neither ascribe value to nuclear deterrence nor tolerate discussion of it. Walker’s firm statement is that it does not matter what value and importance the leading nuclear states and their allies attach to it, neither the role that it could take in disarmament. Walker states that it is important to discuss the meaning of nuclear deterrence, as he claims that it is always present in security discussions but its input to nuclear security cannot openly be accredited or measured.\textsuperscript{95} This means that there is often big gap between states acknowledging the existence of nuclear deterrence and the outcome of the policies of those states. Walker says that: “To pay open homage to nuclear deterrence is to jeopardize the non-proliferation norm and regime”\textsuperscript{96}

3.2.1. NPT Review Conferences

To make sure the NPT would be operational at best, the NPT is being reviewed in conferences that have been held at five-year intervals since the NPT came into effect in 1970. The purpose of the conferences is to find an agreement on a final declaration. This final declaration would make recommendations on the measures to strengthen the NPT and would assess the implementation of the Treaty’s provisions. There was no consensus reached in the Final Declaration in 1980, 1990 and 1995, but it was achieved and succeeded in their main objectives in the 1975, 1985 and 2000 Review Conferences.\textsuperscript{97} It has been stated by many policymakers that the recent non-proliferation regime is to be in crisis. Comparable assessments, however, were made in the run-up to the past four review conferences.\textsuperscript{98}

The 2000 Final Declaration was a turning point, as it marked the first time the parties of the NPT had been able to achieve an agreement on the topics of nuclear non-proliferation, disarmament, nuclear safety and nuclear energy’s peaceful use.\textsuperscript{99} Since the 2000 Review Conference Cuba and Timor Leste have given their consent to the Treaty. However, India, Pakistan and Israel have decided not to join the Treaty, where DPR of Korea withdrew entirely from the NPT. Although the Review Conference had made major achievements, sensitive issues were precipitated on behalf of the Conference and the NPT. The Final Document reaffirmed the central role of the NPT in strengthening nuclear disarmament and non-proliferation globally, and that new parties to the Treaty will be accepted solely as non-

\textsuperscript{96} W. Walker, ‘International Nuclear Order: a Rejoinder’, p. 752
\textsuperscript{97} NPT background information; http://www.un.org/en/conf/npt/2005/background.html
\textsuperscript{98} R. Johnson, ‘Rethinking the NPT’s Role in Security: 2010 and Beyond’, p. 429
nuclear weapon states notwithstanding of their nuclear competences. However, this document was merely a result of a compromise between aberrant and relatively discordant positions. The concerns continue to be raised about the failure to implement many of the commitments agreed at them.

3.2.2. The IAEA

IAEA is being defined by various authors as an international nuclear regime. It is however criticized that it is too inward looking. The convention confirms this nuclear regime with the mechanism to control and inspect which is an entanglement of interests. Nuclear proliferation was seen in a pessimistic way by President Kennedy. President Eisenhower notwithstanding was more positive and created the term ‘Atoms for Peace’ in his speech, where the IAEA was beget. The IAEA was created officially in 1957 in Vienna and since then it was engaged in international technological assistance activities and inspection. The circumstances under which the IAEA has accepted to inspect are when the IAEA had itself arranged for the transfer equipment or; when some technical assistance agreement between two states had specified IAEA as the inspection agent in place of the donor state; and when any state had unilaterally asked the agency to apply such safeguards over specified facilities.

State Department told Congress at the time the IAEA was organized that: “without the IAEA the erosion of control criteria would eventually tend to place any reasonably advanced country in a position to create weapons.” With the IAEA, some change came along likewise. Euratom, which received US nuclear aid, is a nuclear safeguard as well. However, with the IAEA, the non-nuclear states in Euratom will be nevertheless under the safeguard of the IAEA.

Some critics like Jackson state however that the IAEA recently is technically perfect but is also a toothless watchdog. There is the nuclear forensic footprint, so experts can find

101 R. Johnson, ‘Rethinking the NPT’s Role in Security: 2010 and Beyond’, p. 429
103 S.M. Younger, The Bomb. A New History, p. 133-155
out who supplied it. However, the sanctions and penalties are not clear, or not working.\textsuperscript{107} The verification regime of the IAEA was according to some authors weak from the start. The erosion of the export controls regime was one great weakness in the process of verification. The difficulty of time, frequency and ambit of inspections had to be determined by every government apart. There were some successes for the IAEA, but due the lack of coordination during thirteen years, would-be rogue states like Iraq were given a head start.\textsuperscript{108} Iraq’s reactor was bombed by Israel in 1981; however Saddam Hussein created a weapons program employing 7000 people thereafter, which remained unseen for almost a decade from Western inspection.\textsuperscript{109}

3.2.3. Problems of the NPT
The NPT has a large history and is signed by many states. It is seen as one as the most important treaties on nuclear disarmament and non-proliferation. However, difficulties of the NPT and the nuclear non-proliferation regime are reality and many critics have been heard around this topic. The most essential problems have been summarized by Rebecca Johnson, and are in line with most authors on this point of evaluating the NPT. She sees mainly difficulties in the confidence of the nuclear watchdog, the verification process, nuclear programs of Iran and North-Korea, universality of the treaty, good faith principle, and nuclear weapons as instrument of deterrence, article IV, and cheating of the parties.

Johnson discusses the lack of accountability of the IAEA, where she concludes that there is no confidence in the IAEA’s inspections regime; there are some doubts about the duality in IAEA’s role as a safeguard and as high promoter of nuclear technologies. The implementation of the Treaty and Additional Protocol is very slow, which does not seem to be positive towards the adequacy of the IAEA. The IAEA misses the verification powers to live up to its expectations as a nuclear safeguard.\textsuperscript{110} Johnson explicitly states that the real lack of the IAEA is its institutional deficit: “The insufficient compliance and implementation mechanisms in the treaty, coupled with the political and structural inadequacies of the UN Security Council.” \textsuperscript{111} She further touches upon the issue of non-compliance/withdrawal of states as Iran and North Korea, which make the IAEA obligations of a nuclear safeguard very difficult. The NPT also misses universality according to Johnson which can be seen for

\textsuperscript{107} Ian Jackson, ‘Nuclear Energy and Nuclear Proliferation Risks: Myths and Reality in the Persian Gulf’,\textit{ International Affairs, Vol. 85, No.6 (2009)} p.1157–1172
\textsuperscript{108} D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 462
\textsuperscript{109} D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 462
\textsuperscript{110} R. Johnson, ‘Rethinking the NPT’s role in security: 2010 and beyond’, p. 436-437
\textsuperscript{111} R. Johnson, ‘Rethinking the NPT’s role in security: 2010 and beyond’, p. 436
example by the different status of India outside the NPT, but with preferential nuclear trade deals with the US.\textsuperscript{112}

Johnson further raises questions around the abuse of Article IV provisions. The IAEA’s regime does not work adequately in detecting past non-compliance, for instance from Iraq, even when there are suspicions about states as Libya, Syria and Iran concerning ‘cheating’ about the provisions.\textsuperscript{113} She concludes here discussion concerned about the value of nuclear arms. This is especially interesting when linking it to Wendt and Rublee. Johnson’s opinion about nuclear weapons is that there is a continuing high value attached to these arms, as they are seen by people as: “instruments of deterrence, international status, regional power projection or even alliance adhesion.”\textsuperscript{114}

3.2.4. Examples of Other Nuclear Treaties
The NPT is the main treaty on nuclear disarmament; to date 189 nations have signed the NPT. However, other treaties are very important as well. Looking at the Limited Test Ban Treaty (LTBT), and the more recent Comprehensive Nuclear-Test-Ban Treaty (CTBT), many agreements have been made concerning nuclear disarmament and its verification process. The new Strategic Arms Reduction Treaty (START) accord negotiations are interesting developments in the nuclear disarmament process likewise.

In this section I will present a short overview of other treaties than the NPT on nuclear proliferation and disarmament. The START entered into force after a negotiation period of fifteen years on 5 December 1994. It however expired on 5 December 2009. Presidents Obama of the US and Medvedev of Russia agreed shortly before expiry upon the idea of a follow-on treaty that would be finished before START would end.\textsuperscript{115} I will elaborate more on the follow-on START treaty in chapter 5, as Global Zero explicitly builds on this treaty.

The UN has made various commitments and efforts on the nuclear disarmament subject. For instance, in autumn 2009 Resolution 1887 of the Security Council underscored its commitments and recommendations on non-proliferation and nuclear security with an opening phrase that emphasized the importance of ‘a safer world for all and [creating] … the conditions for a world without nuclear weapons’.\textsuperscript{116}

\textsuperscript{112} R. Johnson, ‘Rethinking the NPT’s role in security: 2010 and beyond’, p. 437
\textsuperscript{113} R. Johnson, ‘Rethinking the NPT’s role in security: 2010 and beyond’, p. 437
\textsuperscript{114} R. Johnson, ‘Rethinking the NPT’s role in security: 2010 and beyond’, p. 437
\textsuperscript{116} R. Johnson, ‘Rethinking the NPT’s role in security: 2010 and beyond’, p. 443
The CTBT has concentrated its work on the verification regime effective globally composed out of an International Monitoring System (IMS) and an International Data Centre (IDC), also achieving necessary training programmes for the verification regime conceptualized in the Treaty. The CTBT opened for signatures on 1996 and 174 states have signed and 120 ratified it as of 2005. This treaty bans all testing of nuclear weapons completely in the atmosphere, underwater or below ground. One of the issues addressed at the NPT 2000 Review Conference was the early entry into force of the CTBT. Here, one can see the importance of this verification treaty, the CTBT, as discussed by states at the Review Conference of the NPT.

3.3. Nuclear Disarmament Regime Timelines

To apply Wendt’s theory and to have an overview of nuclear actions and agreements, I have made two nuclear timelines. I will first explain what these timelines represent and how they are constructed, followed by the timelines themselves at section 3.2.1. and 3.2.2.. The two timelines are: the Historical Nuclear Time Line and the Social Constructivist Timeline.

The Historical Nuclear Time Line; the change in nuclear regime is represented in the first scheme by the amount of treaties made and their ratifications. The first scheme of a timeline represents the division into blocks by the amount of treaties and ratifications for the historical overview of nuclear proliferation and disarmament. History and background play a large part in Wendt’s theory, so the first timeline is based just on empirical events throughout the years. This timeline is based on information of sources as Atomic Archives and UN documents on NPT, among others.

This timeline represents highlights of nuclear proliferation and disarmament. It starts with the invention of the nuclear bomb, followed by the events of the Cold War and ends almost 20 years after that, just before the beginning of Global Zero.

This timeline is divided into seven blocks thus, to make it workable I will investigate this nuclear timeline by looking at nuclear disarmament treaties and agreements. It would be too wide and out of focus if I would treat the negotiations, other economic and political alignments and so forth as well. They also include times of growing numbers of treaties or the opposite; proliferation of nuclear weapons. The impact of the treaties however is more

118 NPT background information
120 In Appendix I you will have also an overview of arms control treaties from 1945-2008
difficult to measure, as the information about the compliance of the treaties and agreements is not always present. The other scheme of the nuclear disarmament regime through the social constructivist lens is explained below.

The Social Constructivist Timeline; this second timeline is based on the two social constructivist models combined with some of Rublee’s work. This scheme applies the interactionist thoughts of the evolutionary and international culture models with the emphasis on process and change when looking to the events described in the first timeline. The validation and explanation of the borders of the blocks in the second scheme is based on the social constructivist thoughts discussed in the previous chapter. This social constructivist base and assumptions are in relation to Krasner and his definition of regime. The divisions reflect a breach within the nuclear regime or represent a new nuclear regime. By using some elements of Rublee’s work, the social constructivist models of Wendt can be applied easier. Because Wendt’s theory is very complex with many variables to use his theory of social constructivism to explain change in nuclear regime and discourse, his theory can be combined with the more practical theory of Rublee to make it more comprehensive.

3.3.1. The Historical Nuclear Timeline
This first timeline’s division is based on the amount of treaties; this timeline can be found in Appendix II.121 This represents an historical overview which differs from the second scheme with its social constructivist application. The historical timeline is divided into blocks. With these blocks I will explain and introduce the different historical events. After these blocks, the social constructivist view on this timeline will be presented by its own timeline.

1. The first block represents the start of nuclear energy in 1938, where they recognized the possible negative power of the invention. This can be seen as the run-up towards the nuclear debate. The first nuclear bomb was used by the US in this period and right thereafter the SU got a series of nuclear testing. This block ends with the call of Eisenhower for “Atoms of Peace” and the realization that there should be an agency to control nuclear arms (the IAEA).

2. The second block represents the awareness of the dangerous nuclear weapon, and many treaties and verification programs were set up. In this block the various bilateral pacts were made and the LTBT and CTBT were

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121 Appendix I, p. 64
signed by many countries. This block concludes with the signing of the NPT, one of the most important nuclear treaties.

3. The third block seems to breach with the previous two blocks. Agreements between the US and SU are still made in this period however, these states seem to be more on opposite sides. Meanwhile more countries succeed in building the Bomb. This block begins with the Sino-Soviet crisis between China and the SU with its peak in 1969. This block has a huge impact on the nuclear regime and international politics an sich. With many more nuclear developing countries in the world, nuclear treaties were still made and especially the SU and the US remain the great powers of this era. The SALT negotiations and ABM treaty were previous to the historic INF treaty between the SU and the US. INF banned an entire division of nuclear weapons.

4. This fourth block represents the end of the Cold War. As the Berlin wall falls, the Soviet Union collapse, the world seems to be relieved from the fear of the SU-US tension. According to Verdier’s findings illustrated in the table in Appendix II, 1977-1991 is a period clearly pivotal of proliferation and nuclear change. The most clear line in a change of the nuclear regime came with the collapse of the Soviet Union and thereby the end of the Cold War. This is the beginning of a new era in thinking about nuclear threats. To many scholars, 1991 is seen as the “second nuclear age”, as the bipolar nuclear threat is gone, and makes place for other nuclear threats: that of rogue states such as North-Korea.

5. The fifth block marks a revival of old treaties and new ones, however major non-signers like India raise concern about their nuclear aspiration. Nuclear proliferation is more likely in this period because of the end of bipolarity and the emergence of so-called tipping points or chain-reaction of proliferation. However, others argue that such tipping-point never really invoked a nuclear chain-reaction, there is no compelling evidence that a nuclear proliferation chain reaction will ever occur. Rather, the pool of potential proliferators has been shrinking nowadays and proliferation

122 D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 458, Appendix II, p. 66
pressures were far greater during the Cold War.\textsuperscript{124} The NPT got renewed indefinitely and START II got ratified by the US.

6. The sixth block sees a reduction of nuclear weapons in the treaty member-states. The search for nuclear weapons in the Middle-East and East nonetheless increases. The tensions running higher as North-Korea conducted nuclear tests, Libya along with Iran become more doubtful in their explanations about their “peaceful” nuclear activities.\textsuperscript{125}

7. The last block represents the rapprochement of the US and the SU to come to a comprehensive agreement of nuclear arms reduction. The movement of Global Zero is formed and global awareness of the nuclear threat is being spread. The danger of states or terrorist groups gaining nuclear capacity and pursuing nuclear weapons becomes a larger threat, while superpower US under president Obama tries to come to a nuclear free world. As Derek D. Smith notices: “The success of Cold War deterrence is less relevant today, however, because “the world is no longer a stand-off of the titans.”\textsuperscript{126}

In the following sections and chapters I will investigate if with the coming of the Global Zero movement (the seventh block), a new nuclear regime has emerged. American security was based on deterrence during the (first) nuclear age. One nuclear state would never attack another nuclear state because it was aware of the ruinous retaliatory strike it would suffer. The problem with deterrence is that is seems to be based on a vital degree of rationality, which is not clearly apparent nowadays in Iran neither North Korea, not mentioning Al Qaeda.\textsuperscript{127} Kenneth Waltz notion of deterrence can be a better description: “Deterrence does not depend on rationality. It depends on fear.”\textsuperscript{128} The effort however of key players like the US and the SU, to come to an agreement on nuclear non-proliferation and disarmament is nonetheless a step towards closer world nuclear engagements.

My division of blocks does have influence on the conclusions and social constructivist application. By defining Global Zero as a new block, I already show a change. The question remains if this new block is a structural change and so a new regime, or just a change within the regime.

\textsuperscript{124} F. J. Gavin, ‘Same as it ever was: Nuclear Alarmism, Proliferation, and the Cold War’, p. 18
\textsuperscript{125} NPT background information; http://www.un.org/en/conf/npt/2005/background.html
\textsuperscript{126} F. J. Gavin, ‘Same as it ever was: Nuclear Alarmism, Proliferation, and the Cold War’, p. 8
\textsuperscript{128} J.P. Scoblic, ‘What are Nukes Good for? In Search for a Doctrine for the New Atomic Age’, p. 25
3.3.2. Social Constructivist Timeline

This timeline is not in an appendix and is applied directly.

3.3.2.1. Model 1 and the Nuclear Disarmament Regime

The model of multiple realization of international culture investigates change of anarchies; however, a distinction must be made between different levels of international anarchy. The Hobbesian, Lockean and Kantian levels are the outcome of the level or amount of revisionist states, status quo states or collectivist states in the system. The distinction between levels of anarchy is between that of regional blocks and that of global application. I treat anarchy here global, as nuclear weapons are a global threat. The three types of anarchy and the Neo-Realist coercion (forced to do something), Neo-Liberalist price (doing it out self-interest), and Constructivist legitimacy (doing it because you think it’s legitimate) will be tested. Those are respectively the 1st, 2nd and 3rd Degree of cultural internalization in the model.\(^{129}\) It will be interesting to see if the change of different kinds of anarchy influences the structure of the nuclear disarmament regime.

Rublee states that the following conditions might affect the influence of norms: uncertainty, similarity and conflict.\(^ {130}\) Because norms are part of the definition I used for a regime, it is necessary to explore those conditions to the nuclear timeline. When those conditions occur, state actors are more likely to accept group influence. Conflict is nevertheless the only one which decreases the impact of normative influence potency.\(^ {131}\) The three dynamics in the expectations of constructivism and nuclear behaviour: persuasion, social conformity and identification hereby must be explored against the nuclear disarmament regime.\(^ {132}\)

Constructivism provides many explanations for the opt-out of the NPT of the five countries. Especially for Japan and Egypt, where their neighbour states were not nuclear anymore and they all suffered large losses in military fights which made them reluctant for any other conflict and made them seek other alternatives for state success.\(^ {133}\)

3.3.2.2. Model 2 and the Nuclear Disarmament Regime

The evolutionary model, with the key aspects imitation, learning, and collective identity, explains the process of change at a different level. By applying the interactionist framework,

\(^{129}\) A. Wendt, ‘Social Theory of International Politics’, p. 254
\(^{130}\) M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p. 49
\(^{132}\) M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p. 27
where complex learning and reflexivity are key assumptions, the blocks in this scheme are
based on action, reaction and social learning.

Collective identity change and development can be of great use in investigating the
process of the nuclear discourse and regime as collective identity can create change in
structure. The “master variables” of the evolutionary model are: interdependence, common
fate, homogeneity, and self-restraint. The combination with causes will be necessary for the
occurrence of collective identity formation. Collective identity will be affected by the
density of interaction, as reflected appraisals have faster and deeper effects on identity as the
dependency of actors rises.

3.3.2.3. Timeline
The key aspects of the two models are:

- Hobbes, Lockean, Kantian anarchy – Enemy, Rival, Friend – coercion, price,
  legitimacy.
- Imitation, learning, collective identity - interdependence, common fate, homogeneity,
  and self-restraint.

When applying those aspects against the historical timeline or history of nuclear disarmament,
the following division can be made:

The first block can be formed and constructed by the beginning norm of nuclear power
and its threat. Here the world is mixed by the Hobbesian power to conquer, and at the same
time the superior invention of nuclear energy. This can be based upon the Second World War,
the world is divided in ally or enemy, where know one can be trusted. The Hobbesian
characteristics of coercion and war are at their highest point. The world shifted, however, to a
more Lockean world in the years thereafter, as many states and people throughout the world
condemned nuclear power as a weapon and feared the immense power it consists. States
became rivals, as there was a sort of retrace who would invent a bigger and better weapon.
The hydro-bomb was created, but still many voices were against the nuclear power as a
weapon.

As more treaties came to fence the power of nuclear weapons, more interdependency
and common fate was created. As the years went by, collective learning from the effects of
the nuclear bomb on Hiroshima and Nagasaki grew as well. Still, some parts of the world
stayed enemies during the Cold War; some parts were rivals and even some parts of the world
friends. I think that the world always has some part Hobbesian, some part Lockean and some

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134 A. Wendt, ‘Social Theory of International Politics’, p. 343
135 A. Wendt, ‘Social Theory of International Politics’, p. 347
part Kantian. It is important to notice which part has a larger contribution in the world. Throughout the Cold War the world was between Hobbesian and Lockean, but by the making of many agreements, it shifted more to the Lockean anarchy. But the implementation and realization of the nuclear treaties is somewhat undermined.

In the nuclear disarmament the action/reaction of states can be seen very clearly. How states perceive the Other is key here, as one can influence the Other to proliferate or disarm. It is interesting to see the disarmament of South Africa. The superpower US has large influence on many states as well, not only in the western world to disarm, but in the opposite direction too.

Imitation is very limited, because nuclear weapons are a very serious issue and links to national interest. Nonetheless, because of the interdependence in the world, regions and neighbour states can copy the actions of other actors in order to feel part of the game. The common fate that states share in destroying the world or part of the world which happens if nuclear weapons (especially the hydro-bomb) are used makes this issue a very complex one. At the one hand you have states that are interdependent and act in blocks (western world) or regions, and at the other hand there are ‘rogue’ states that are less interdependent (North Korea) that do not have that homogeneity and self-restraint. The regional blocks work coercive; however not coercive enough, as the only weapon or strategy that will work against an independent ‘rogue’ state is the very weapon they want to extinct: nuclear power.

Collective identity plays a large role in the issue of nuclear disarmament. Once some states that have not much power imitate and learn from large powers or the superpower, collective identity can be created. By the amount of treaties and agreements, one can derive the conclusion that a form of legitimacy plays a part in nuclear disarmament as well. As all key aspects are some how interlocked and interrelated, one leads to the other. When you look at imitation, learning and collective identity it follows through to interdependency and common fate. They get homogeneity and find legitimacy important to cover issues as nuclear weapons.

**Conclusion**

There is a change in nuclear disarmament over the years from the birth of the nuclear bomb until Global Zero. It is, as with many things, the interpretation which is key in this analysis. The historical background plays an important part why states act the way they do. With the two models of Wendt, the events and interaction of the states concerning nuclear disarmament
can be translated from theory to practice. It seems that the nuclear disarmament regime is changing throughout time, but the main question remains if it is structural change.

Following the social constructivist view/interpretation it could not entirely be seen as structural change. The different blocks each had aspects of Wendt’s elements for structural change; different anarchies were seen over time. The process and knowledge of cultures do have changed, especially after the Cold War. Just this will not say that there is cultural change, thus structural change. When looking at the history of the nuclear disarmament regime, it seems to have a cyclical development; as every block has its proliferation and nuclear agreements. In some blocks, such as block 3, nuclear proliferation has the overhand. In other blocks, such as block 5, the shift towards agreements and cooperation is the dominant part. The nuclear culture in the West is very different to that of the Middle-East. However, there is a change between the end of the Cold War nuclear regime and that of the current nuclear regime. There is more signing of nuclear disarmament treaties than before and the norm against nuclear disarmament is closer between the US and the Russian Federation (RF) than it was in the early nineties.

Nonetheless, there are more players in the world than the former Cold War star-players, which can be seen as a development backwards. The US–SU/RF and allies are closer together in their stand against nuclear weapons these days, but other players have stepped to the front and are big concerns in the nuclear disarmament regime now. Change can be seen, but in two different ways. The US-SU/RF and the western region are moving more from a Lockean to a Kantian world, where the Middle-East/rogue states are forming more a threat against the “western world” and its allies and shift from a Lockean to the Hobbesian.

The world stays interdependent and continues to develop more into a world of interaction. There are some exceptions but seen in the whole, there is no structural change in the nuclear disarmament regime. The next chapter will examine if these findings are also true for the nuclear disarmament discourse.
Chapter 4: Evaluating the Discourse of Nuclear Disarmament

Above I evaluated the nuclear regime. In this chapter, the influence of the regime will be discussed. The nuclear disarmament discourse includes people’s perception about the nuclear disarmament regime and their actions. First I will define what the discourse of nuclear disarmament means. According to William J. Kinsella, the nuclear discourse is “understood as a formation of power/knowledge linking institutions, practices, and a dense network of representations and meaning”. To investigate the real meaning of Global Zero, the nuclear disarmament discourse must be evaluated.

Meaning is again an important element, where this meaning and interpretations of the nuclear disarmament process will be evaluated by the social constructivist view of Wendt. Kinsella places the beginning of the nuclear discourse in the year 1903. This is when Ernest Rutherford and Frederick Soddy published an influential paper about radioactive energy. Einstein’s well-known paper on special relativity appeared around that same time as well, in 1905. This paper was providing the theoretical link between mass and energy. Kinsella states that those scientific papers as the first formal declarations of the immense potential of nuclear energy, can be seen as markers. This means that, following Kinsella, contemporary nuclear discourse is now a century old. The present discussions and current concerns regarding nuclear weapons proliferation demonstrate the continuing significance and evolving characteristics of this discursive formation.

Having described this historical starting point, for evaluating the process of nuclear disarmament discourse I will start from that point. I will use data from just before the moment the first nuclear bomb was used in warfare. As end point I will take December 2010, as the Global Zero campaign is still active in present time. I want to investigate the possibility of a breach in the nuclear disarmament regime, so I will take Global Zero into account. For analyzing the discourse, I am relying on statements of nuclear proliferation and disarmament. Most of the statements that can be found are from Western (-minded) sources. The main source I have used to gather statements on nuclear weapons are from the Bulletin of Atomic Scientists, as this seems to look at the effects of nuclear weapons to humanity and not at the

136 William J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, The Environmental Communication Yearbook of North Carolina State University, Vol. 2, Ch. 3 (2005) p. 49
137 W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 49
138 W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 49
political influence nuclear weapons can have. There should also be a link made between the nuclear discourse and its effects. It must be noted, as Kinsella argues, that nuclear discourse is not necessarily the root cause of the many problems associated with it. Nuclear discourse could be understood as a product of underlying systems of meaning, and must be understood more like a vehicle for flows of knowledge and power associated with those systems of meaning. Below various academics and theorists on nuclear issues will be discussed about their vision on nuclear disarmament.

4.1. Thoughts on Nuclear Weapons

In the 1940s the nuclear age started when scientist discovered how the energy stored within an atom could be released. There were two potential uses for this material: as the most unmatched deadly weapon and as a new energy source. The US build and used the first atomic bomb, and they were followed within two decades by the other four member states of the UN Security Council. India, Pakistan, Israel and North-Korea have built nuclear weapons since then as well.

The US, SU/Russian Federation, Iran, China, North-Korea, France, UK, India, Pakistan, Israel, Libya, Syria are seen as nuclear entities. James Wood Forsyth Jr. wrote an article in the Strategic Studies Quarterly that there are different forms of nuclear deterrence: a nuclear deterrence and a general deterrence. This division is made because of the big difference between conventional and nuclear weapons. As Forsyth Jr. reminded what Horner stated, nuclear learning did occur through history, it is clear that it is important to know the nuclear history of states. Now decision-makers are talking about nuclear zero again, but according to Forsyth Jr., nuclear arms might be politically the most useful weapons a state can possess; this helps explain proliferation.

The role of the media has increased over time and people all around the world are connected and can participate in public debate. This has its influence on the nuclear debate as well. The social media and internet are now used to reach many people, including the nuclear topic. This awareness had reached a high point in the eighties as well; the concerns about the

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139 W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p.51
140 http://www.thebulletin.org/content/doomsday-clock/overview, visited on 03-08-2010
141 Bulletin, doomsday clock, //www.thebulletin.org/content/doomsday-clock/overview
142 J.S. Yaphe, C.D. Lutes, ‘Reassessing the Implications of a Nuclear-Armed Iran’, McNair Paper, INSS/NDU, 2005
144 J.W. Forsyth Jr., e.a., ‘Remembrance of Things Past: The Enduring Value of Nuclear Weapons’, p. 85
newly developed NATO weapons in Moscow were nothing compared to the concerns of the people. The public uproar in Russia concerning the Euro-missiles pressured decision-makers of the US and the NATO to reduce the US nuclear arsenal in Europe. Nonetheless, nowadays there are still negative results of the use nuclear weapons, looking at Hiroshima and Nagasaki. The movements set up against nuclear proliferation can reach more people now because of the internet and interconnected media, and can use many different ways to influence people and their decision-makers.

4.1.1. Kinsella
Kinsella points out a statement made by Ruthven: "To thematize the nuclear is also to familiarize it; and the more it is familiarized, the greater the risk of its becoming normalized". Norms are once more very important in examining nuclear disarmament. It can be linked to Wendt’s thought in this matter as Kinsella states in a way that by naming something, it becomes what you named it. Kinsella takes only a different stand, by saying that the nuclear threat became something normal in our daily lives as it has been thematized. This is not entirely true. If we think about the possibility of a nuclear outbreak all the time, people and live could not function any more. The possibility that people make peaceful choices concerning the nuclear threat is bigger than making the catastrophic choices, as we can see throughout history. There are no nuclear attacks after those two in Hiroshima and Nagasaki 1945.

Kinsella sees the nuclear in four ways or ‘master themes’: as mystery, potency, secrecy and entelechy. The way in which the nuclear is a mystery is the fact that it is in some way incomprehensible. You can not see an atom with the naked eye. It is also hard to comprehend that such a force can come free when atoms collide. Kinsella describes atoms even as godlike entities where humans appropriate the status of gods in their turn striving to control these atomic forces. Kinsella points to Chernus’ comment made in 1986 that the structure of atoms and therefore that of the Bomb is a mystery in itself.

146 W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 52
147 W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 51
148 W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 54
149 W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 54
Kinsella sees potency in the nuclear as the nuclear potency can be seen as property of the material and external world. Kinsella gives as an example the narratives during the 1950’s about nuclear energy. Humanity can be seen as a species that discovered a pre-existing force. From the moment of that encounter, human responsibility starts, chosen the right or the wrong path. Kinsella states that those narratives carry a confidence in the positive ending of the decision made to choose the right or the wrong path. He says that humans can domesticate the external power of the nuclear.\textsuperscript{150}

Secrecy is the third element; states have to treat their nuclear expertise with secrecy, and some countries needed secrecy towards the international community for the unlocking of the nuclear force. No state wants fully reveal their national security measures, so secrecy is a main part of the nuclear. Kinsella treats secrecy as the unanswered question of the ending of the nuclear. The question remains where the end of the nuclear process will be.\textsuperscript{151}

Entelechy is a difficult master theme to explain, but it suits very well with social constructivism. Entelechy stands for the consequences, output and perfection of issues. In a way it can be described as destiny or fate. Kinsella elaborates on entelechy from the perspective of Burke and Aristotle. With entelechy he means it “classifies a thing by conceiving of its kind according to the perfection (that is, finishedness) of which that kind is capable….By its fruition, we should judge it.” \textsuperscript{152} When combining this with the nuclear discourse, nuclear weapons are the fruition.\textsuperscript{153} The nuclear discourse can be seen as something in constant change and development: as what people perceive and in the way they act on the nuclear regime, they form its meaning.

4.1.2. Terrorism

Terrorism seems a debatable difficult factor in the nuclear disarmament discourse. Terrorists seem to want to obtain a nuclear weapon. However, to built and manage a nuclear weapon is very expansive, it needs lots of expertise and terrorists are not that independent as they may seem. The largest terrorist groups with a large amount of money and influence are entwined with criminal organizations and those organizations are not independent. They depend on the global system and capitalism. So, for terrorists it is not that convenient to obtain a nuclear

\textsuperscript{150} W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 56
\textsuperscript{151} W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 67
\textsuperscript{152} W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 64
\textsuperscript{153} W. J. Kinsella, One Hundred Years of Nuclear Discourse: Four master Themes and Their Implications for Environmental Communication’, p. 64
weapon when looking at it by a cost-benefit analysis. The question remains, what happens if terrorists that are not seeking earthly power got nuclear arms? That category of people do not fear death, but see their own sacrifice and that of others in the light of their faith and religion. This is however an issue where one can write books about. For this thesis, it is important to keep in mind that terrorist groups gave a new boost to the nuclear debate.

4.2. Nuclear Learning

Nuclear knowledge can be obtained by nuclear learning. Horowitz states that the length of time that countries are the owner of nuclear weapons influences their behaviour. Horowitz’ conclusion is based on the process of nuclear learning. He says that states can learn how to participate and react on nuclear politics in the world by having nuclear weapons. They will learn how to leverage with their nuclear power as it is a coercive force. In his findings on nuclear learning he quotes Waltz and Sagan by saying that nation states will always make a cost-benefit analysis in the case of using their nuclear power as leverage. Horowitz concludes that information about nuclear leverage and coercion is generated by interaction of the nuclear nation states. This interaction and the information provided by this interaction reduce uncertainties and will make the usage of nuclear power by nuclear states less likely. This can be seen in appendix VII, where it shows a clear diminishing dispute rate when the years of nuclear possession are high.

Dallas Boyd claims that conventional weapon disarmament should be reality first in order to come to a nuclear weapons free world. Boyd thereby quotes Waltz by saying that nuclear weapons are the lesser of two evils as it is less frequently used or had that many casualties than conventional weapons. Boyd sees warfare as a kind of self-fulfilling prophecy, and hereby gets very close to Wendt’s ideas on warfare. It becomes what states want it to be. The mechanisms of self-deterrence work for nuclear weapons in a positive way, those mechanisms are not found at conventional weapons.

154 Notes of the MA International Relations course: the Causes of Political Violence, RUG, may 2010.
158 Figure of correlation time and nuclear weapons, and reciprocity by Michael Horowitz, Appendix VII, p. 70
The same kind of argument about the link of nuclear weapons and conventional weapons can be found in the work of Erik Gartzke. Gartzke however points out the importance of exploring vertical proliferation or stockpiling. Nuclear security dilemma has two sides: the fear of a nuclear outbreak which could vanquish the world, and the hope that this fear of a nuclear holocaust will be so severe that it can prevent a nuclear war. Uncertainty and familiarity are major elements in conflict-managing according to Gartzke. This means that interaction and social learning have great influence in the decision-making process which Wendt also underscores.

4.2.1. Nuclear Stockpiles

The nuclear stockpiles of countries worldwide still consist of a large amount of nuclear weapons. In appendix IV and V the stockpiles of many countries and of the US are shown. As the table of appendix IV shows, Russia and the US have clearly the most nuclear weapons in the world. Therefore, when they make nuclear agreements, it affects most of the nuclear weapons in the world. On the other hand, one nuclear weapon can already have devastating effects, so the other countries must not be forgotten.

An interesting fact is the stockpiling of American nuclear weapons in European countries. This is interesting as those nuclear weapons of the US are spread out over the European continent, extending the nuclear umbrella of the NATO. The nuclear stockpiles are strategically placed when looking at the former enemy of the US, Russia. Although Russia and the US have ratified nuclear treaties and are formally no enemies anymore, the nuclear weapons of the US are still in place and they could be pointed at Russia immediately. In appendix VI the nuclear stockpiles in Europe are shown.

Kristensen of the Natural Resources Defence Council (NRDC) discussed in his report of 2005 that because of its lost military role in Europe after the Cold War, US decision-makers started to look for any political justifications for nuclear arms. Not just inside of Europe, but also outside the continent. This can explain the widespread of nuclear arms.

162 E. Gartzke, ‘Nuclear Proliferation Dynamics and Conventional Conflict’, p.6
163 E. Gartzke, ‘Nuclear Proliferation Dynamics and Conventional Conflict’, p.6
164 ANP 29-11-10 and Appendix VI, p. 69
4.2.2. Nuclear Countries and Assistance

Matthew Kroenig examined nuclear states and their level of nuclear assistance towards other countries. He states that most of the nuclear countries have received help from other countries.\textsuperscript{166} In appendix VIII is a graph of correlation between nuclear states and nuclear assistance.\textsuperscript{167} When nuclear assistance is sensitive, the supplier state does not have great influence over the recipient state. The relative power is less than before. However; when the supplier gives nuclear assistance what is not sensitive, the relative power of the supplier over the recipient state is greater than before. I mention this assistance as it influences the relative power of states and their interdependence. When there is nuclear assistance, states are interconnected and a transition of power takes place. This shift in power can have its effect on the nuclear thought and learning of the recipient and supplier state.

4.3. Nuclear Countries

The following is based on information from the Atomic Archive, the Carnegie Endowment, Stockholm International Peace Research Institute (SIPRI), and Arms Control Association (ACA) as it shares thoughts on states that play a major role in the nuclear disarmament issue. In appendix III there is a summary of the findings of the ACA. This Report Card shows the assessment of progress on Nuclear Non-proliferation and Disarmament 2009-2010.\textsuperscript{168} The countries I treat below are apart from the great powers of the Cold War: US and SU/RF, as their roles of these two superpowers are discussed in other chapters and sections.\textsuperscript{169}

For the social constructivist approach, it is important to examine what kind of countries these nuclear countries are; revisionist states, status quo states or collectivist states. This typology determines the states in which anarchy is; Hobbesian, Lockean or Kantian. In the nuclear discourse states have to be seen in a system of action/reaction, friend or foe toward the other. The discourse is based on stories, background and perceptions of the Other states of a states’ the nuclear ambition.

SIPRI and FirstWatch International (FWI) have made a list of countries that have the potential to be a "Nuclear Strategic Concern." These countries have access to nuclear material and are all players in nuclear non-proliferation policies; however they have technological

\textsuperscript{166} Matthew Kroenig, ‘Exporting the Bomb: Technology Transfer and the Spread of Nuclear Weapons’,\textit{ American Political Science Review}, Vol.103, No.1 (Febr. 2009) p. 113-133
\textsuperscript{167} Appendix VIII, p. 71
\textsuperscript{168} Appendix III, p. 67
\textsuperscript{169} http://www.atomicarchive.com/History/coldwar/page24.shtml
potentials for the development of nuclear weapons.\textsuperscript{170} Below is a short description of the countries that have influenced worldwide nuclear disarmament regime and discourse through their policies and non-policies, or nuclear vagueness. Their order of appearance is in random order.

4.3.1. South Africa
This nation is a significant nation in the nuclear disarmament process as it has voluntarily given up its entire successfully developed nuclear weapon program. The former president De Klerk announced in 1993 that the state had nuclear weapons, but did destroy them before the signing of the NPT in 1991. South Africa expanded its nuclear non-proliferation act and became a member of the Missile Technology Control Regime (MTCR) in 1995. The country has also acknowledged that Israel had given South Africa assistance. For exchange of this assistance Israel demanded 550 tons of raw uranium.\textsuperscript{171} The question remains why South Africa developed the nuclear program in the first place, as it faced only a few external security threats.\textsuperscript{172}

4.3.2. Israel
Israel is regarded by many authors as a de facto nuclear weapon state. However, the country is not a party to the NPT, neither has it acknowledged that it has nuclear weapons. In contrary to South Africa, Israel perceives a real threat from its Arab and Persian neighbours. Israel therefore continues to maintain a highly advanced military, a nuclear-weapons program and offensive and defensive missiles.\textsuperscript{173} Israel has one of the most advanced nuclear programs (as we know) in the Middle East. This program started out in the late 1950’s as Israel perceived an increasing threat from its neighbours. The state developed a missile program with assistance of the French during the 1960’s. Nowadays, its nuclear arsenal is estimated at between 20 and 100 Nagasaki-sized bombs. Nonetheless, Israel has claimed that it would never be the first country to start introducing nuclear weapons to the Middle East. Even so, Israel is not a member to the NPT, but it has signed the CTBT.\textsuperscript{174}

\textsuperscript{171} http://www.atomicarchive.com/History/coldwar/page24.shtml
\textsuperscript{172} M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p. xiii
\textsuperscript{173} http://www.atomicarchive.com/History/coldwar/page24.shtml
\textsuperscript{174} http://www.atomicarchive.com/History/coldwar/page24.shtml
4.3.3. Iraq

The IAEA discovered after the Gulf War that Iraq had violated the NPT by secretly pursuing a nuclear-weapons program. IAEA officials estimated that Iraq might have been able to develop its first atomic bomb by 1993. This could have become reality if the Gulf War not intervened this manufacturing. These IAEA inspectors returned to Iraq in 2002 and stayed until the start of Operation Iraqi Freedom in 2003. This operation or invasion led by the US was driven by the belief of the US that Saddam Hussein had deceived the IAEA and was hiding its weapons of mass destruction (WMD) arsenals and capabilities. The investigations however confirmed that after the first Gulf War Iraq’s nuclear program was destroyed.¹⁷⁵

Nonetheless a strong believe in the Western world arose that Iraq had not abandoned its ambition for the development of nuclear weapons. Investigators estimated that if the UN sanctions were abandoned, the time to rebuild and manufacture a nuclear device would take Iraq five to seven years. The capabilities and development of nuclear weapons in Iraq were never discovered, missing nuclear related equipments were reported frequently since the start of the 2003 war.¹⁷⁶

4.3.4. Iran

Iran had been a party to the NPT since 1970. Many countries however claim that Iran is having a secret nuclear-weapons program since the mid-1980s. Iran’s main suppliers of nuclear technology have been China and Russia. The rapprochement of negotiating the issue of peaceful nuclear activities has followed with the United Kingdom, Germany and France as Iran’s nuclear capability grew in 2005. Attempts were made to persuade Iran to give up its fuel-cycle ambitions and accept nuclear fuel from abroad. However Iran stated that it would not be a guarantee if Iran’s peaceful nuclear technology would lead to attending all nuclear related negotiations.¹⁷⁷ There where many other fields of tension as highly enriched uranium (HEU) particle contamination was found in Iran. The EU stated that under the NPT, Iran had lost its right to nuclear energy (Article 4 NPT because it violated Article 2). The resolution passed with Russia and China among the 12 who abstained from voting. The IAEA claims that Iran is trying to finish its Bushehr reactor. Experts however do not agree on how close

Iran is to developing a nuclear device. The estimates range from a nearly a decade to a few years.\textsuperscript{178}

4.3.5. China

China has been a growing power after the end of the Cold War. It is a rival and sometimes enemy of the US. They have always had the no-first-use-policy in concern with nuclear weapons.\textsuperscript{179} China sees the US as a power that makes treaties and agreements with other countries in the case of weapons and nuclear materials, but the US do not apply those rules to them. It finds the US hypocritical, as the US have been treating China as a nuclear danger. However; China only conducted 39 nuclear tests, while the US conducted more than a 1,000 until 1994.\textsuperscript{180}

4.3.6. North Korea

North Korea signed the NPT in 1985. However, it is believed that this country is pursuing a nuclear program in violation of the Treaty. The country stated in 2003 that it was withdrawing from the NPT. After this announcement North Korea claimed in 2005 that it has manufactured its first nuclear weapons. It started by not allowing the IAEA to conduct inspections until 1992, than in 1994 it made an agreement with the US to stop the further development of the nuclear program in exchange for aid and oil.\textsuperscript{181}

The contradiction lies in the signed "Statement of Principles" in September 2005 on the Six-Party Talks in Beijing. These principles referred to the destruction of all nuclear programs, as well as the return of North Korea to the NPT and IAEA safeguards. This never happened. Because North Korea is such a closed country the IAEA was never able to verify neither the completeness nor correctness of North Korea's initial declaration submitted in 1992.\textsuperscript{182} U.S. have requested China many times to interrupt and choke off the flow of military technology from Pyongyang to Tehran that helps to sustain that regime.\textsuperscript{183}

\textsuperscript{178} http://www.atomicarchive.com/History/coldwar/page24.shtml
\textsuperscript{180} D. Shen, ‘Toward a Nuclear Weapon-Free-World: a Chinese Perspective’, p. 52
\textsuperscript{181} http://www.atomicarchive.com/History/coldwar/page24.shtml
\textsuperscript{182} http://www.atomicarchive.com/History/coldwar/page24.shtml
4.3.7. Libya

Libya can be seen as another nation of nuclear concern. The leader of Libya, Muammar Qadhafi has stated in 2003 that he would commit to dismantle Libya’s WMD programs after a long period of negotiations with the UK and US. Libya had ratified the NPT in 1975 and had signed the Additional Protocol of the NPT in 2004. Qadhafi had pledged to adhere to the NPT and invited the IAEA to verify the elimination of nuclear activities in Libya. The IAEA had accepted this invitation and verified it in 2003. The IAEA inspectors did find imported equipment and technology. These materials were found at a number of previously secret nuclear facilities in and around Tripoli. By these inspections the IAEA had discovered that through a black-market network Abdul Qadeer Khan of Pakistan was responsible for providing Libya with its nuclear materials.\(^{184}\) The nuclear strategy and perception of nuclear value are different throughout the West and the East. This makes the nuclear discourse vary around the world.

4.3.8. Japan

Japan has a very strong army and is against nuclear weapons as result of the damaging effect it had on this state. The hibakusha\(^{185}\) are symbol of the devastating effect of this dangerous weapon. The controversy is that Japan is a link in the chain to obtain nuclear weapons. It has power to be the creator and builder of one part necessary to build a nuclear reactor. The decision making in the case of nuclear weapons is somehow sensitive, as it is the only country that experienced and is victimized by nuclear bombings.\(^{186}\) During the Occupation by the US antimilitarism and antinuclear sentiment grew.\(^{187}\) Japan has therefore three significant non-nuclear principles.\(^{188}\) Japan always had a great concern about China and their nuclear policy, as they both are powerful actors in the Asian region.\(^{189}\) As mentioned in the previous chapter, Japan joins the NPT and ratifies it in 1976. The nuclear decision-making process of Japan was not only influenced by China, and by the US. She is also influenced by other nations in the regions as the Korea’s, especially by the politics of North-Korea.\(^{190}\)


\(^{185}\) Hibakusha are Japanese survivors of the atomic bomb.


\(^{188}\) M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p. 57


\(^{190}\) M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p. 71
4.3.10. Egypt
Having lost in a conflict against a nuclear-armed adversary and with regional competitors known to be working on nuclear weapons she does not require nuclear weapons for security.\textsuperscript{191} The Israeli-Egyptian conflicts between 1948 and 1973 were lost military by Egypt.\textsuperscript{192} Sadat did not like the future of his country and took lots of advice from militaries, foreigners and so on. He eventually made a shift in mindset, as he now treated Israel no longer as demonic state, but as a friendly one. The shift that Sadat made of national interests (good economy, close relationship with the US) made nuclear weapons not cope with this new strategy at the end.\textsuperscript{193}

4.3.11. Brazil
Countries like Brazil are important players as well in world politics, as this country is a leader in spending on arms and military equipment.\textsuperscript{194} The difficulty in categorizing this country is the fact that Brazil has huge military and defence spending against the threat of criminal activities. The border between criminal activities and the goal of criminal organizations to obtain a nuclear weapon is getting vaguer. In this it is the same as with terrorism as I mentioned above. When does criminal activity of organizations become nuclear? It seems to me that behind the criminal activities of obtaining nuclear weapons by organization there is a state or terrorist group. How interesting this discussing may be and needed to be pointed out, I will not elaborate on this dilemma, as it is not a part of the investigation of this paper. This country has nonetheless the nuclear materials as the nuclear technology to built nuclear weapons.\textsuperscript{195}

4.3.12. Sub-conclusion Nuclear Countries
The nuclear countries mentioned above have different reasons to have or refrain nuclear arms. The clearest reason by most of the countries is a threatening neighbour- or regional state. When categorizing these states in types of anarchy, the nuclear process can be seen as a Hobbesian or Lockean world. With the help or assistance of other countries, the rival or friendly ties can be seen. As well as the enemy ties when looking at the direct threat of some

\textsuperscript{192}M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p. 100
\textsuperscript{193}M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p. 140
\textsuperscript{194}‘Industry briefing: Latin America Defence’, Business Latin America, November 3\textsuperscript{rd} 2008, The Economist Intelligence Unit Limited 2008, p. 4-5
countries especially in the Middle-East. When there is an abolition of Western nuclear power, then little nuclear power of new nuclear states as Iran can be perceived as very dangerous. 196

The perception of the Other has a key role in this nuclear decision-making of states. It shows that when many perceive the Other as a threat, they want to arm and protect themselves against that threat. However; not all states protect themselves in the same nuclear way. Also, when looking at South Africa, in some states it is not clear why they have nuclear arms in the first place. As the perception of the Other is not a direct threat.

**Conclusion**

Having discussed different countries with their various stands on the nuclear issue, it is clear that the decision for going nuclear is based on different perceptions and reasons. The nuclear discourse varies around the world, as some see nuclear weapons as a real threat and others as a necessity to protect them. The nuclear threat is a global threat, and involves all people. It is therefore difficult to say which way the nuclear process will go. How far will the key stakeholders of nuclear power go to protect their power? The key stakeholders of nuclear power shall continuously make a cost-benefit analysis in order to see if it is worth to have nuclear power politic-wise. The people of the nuclear countries also influence the decision-makers. When people stand up and take a firm stand against nuclear weapons, most leaders will listen. This can be seen in the nuclear riots in the Soviet Union in the eighties.

The perception of the Self and the Other are very important in the nuclear discourse, as they give meaning to the nuclear process and outcomes. The perception of nuclear issues is constructed by civilians, institutions and state decision-makers. This is an important element in the social constructivist view. The social constructivist view has influences from the realist approach, but this vision is for example sharply in contrast with Realists such as Mearsheimer. Mearsheimer states that the spread of international institutions changes nothing in the way states have been interacting for centuries. He sees institutions as merely a reflection of powerful states’ calculations. 197

According to the social constructivist view, nuclear learning of states and institutions can influence the perception of the Self and the Other. Because the division of the roles of the Self and Other is more clear when the nuclear learning advances. How longer the time that a country has nuclear weapons, the greater the chance is that it will not pressure and see nuclear

197 D. Verdier, 'Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime*, p. 440
arms as means of leverage. It can make a more weighted decision on his Self and what the Other will do.

The question of this chapter was: To what extent had the nuclear disarmament discourse changed? The development of the nuclear disarmament process has been evaluated and it varies throughout time. But is this also strong enough to speak of a new structure? Both the nuclear disarmament regime and discourse have been discussed and evaluated. Now it is time to look into the influence of Global Zero. Is there a structural change in comparison to the previous nuclear disarmament regime and discourse, or is it a continuation of history? The next chapter will evaluate the Global Zero process and outcome through the social constructivist view.
Chapter 5: Global Zero

In his Prague speech in 2009, US president Obama called for a world without nuclear weapons.\(^{198}\) This seemed to be an historical statement, but in 1961 President Kennedy proclaimed almost the same in the UNGA. President Kennedy stated: ‘The weapons of war must be abolished before they abolish us.’\(^{199}\) The words are slightly different, but the meaning and thought behind it are the same: zero nuclear weapons in the world.

Before discussing what Global Zero explicitly is I will start with some major problems with the process of Global Zero. It must first and foremost apply to all nuclear weapons states, those under the NPT and those outside the NPT. However, Israel has no interest at present in even deliberating on the process of nuclear disarmament. Further, the very logic of Global Zero assumes minimum transparency about nuclear status. There must be a self-declare of all nuclear weapons states with nuclear acknowledgement as its norm.\(^{200}\) Without compliance and norm, Avner Cohen states, it is pointless to even to speak about Global Zero. Acknowledgement and declaration precede verification, and this is a very big issue discussed in the section about the IAEA.\(^{201}\)

When applying the ideas of Wendt to Global Zero, the Kantian anarchy can be seen as most close view of a world without nuclear weapons. The characteristics of friendship and peace can flourish best in a world without nuclear threat. If there would be nuclear weapons, this would also be perceived by some state as a nuclear threat. This would not fit in the definition of a world in Kantian anarchy according to Wendt. However: the Western allies do not feel a threat by the nuclear arms of each other, but only because they act on this nuclear matter with a shared objective of trust. These objectives of trust belong to the Kantian anarchy.

In this chapter I will investigate Global Zero when answering the last sub-question in this chapter: What is the social constructivist view on the process of Global Zero? This last sub-question is the final step in answering the main-question of this thesis. Let me first go to the start and explain exactly what Global Zero is and how it is created.

\(^{198}\) Prague Speech by US president Obama, 05-04-2009
\(^{199}\) R. Johnson, ‘Rethinking the NPT’s Role in Security: 2010 and Beyond’, p. 445
\(^{201}\) A. Cohen, ‘Israel’s Nuclear Future: Iran, Opacity and the Vision of Global’, p.16
5.1. Getting to Zero

The US play a serious part in the Global Zero Movement. The goal of nuclear abolition has its origin in the US and is formed by George Schultz, Henry Kissinger, William Perry and Sam Nunn. Dallas Boyd underscores the importance of the leadership role by the US in the goal of a nuclear weapon free world. He states, as cited: “Divided between US and international initiatives, they heavily tilt toward Washington for precisely the reason the global zero movement requires US leadership – the United States is both a unique moral authority and a reference point from which many other nations measure their behaviour.”

In appendix V the estimated stockpile of nuclear weapons of the US is shown. It appears that the amount of nuclear weapons of the US is diminishing, with some higher rates in 2004 but from then on lower rates than ever. This is a good beginning for the end of nuclear weapons in the US.

The costs for the transformation of nuclear warheads to conventional warheads are, logically, very high. Therefore, the cost-benefit analysis will work with a positive effect towards nuclear weapons in stead of nuclear disarmament. But, the pressure of international negotiations of politicians can not be forgotten nor other unconventional weapons. Politics and tactics of strategic defence are based on the principle of the Self. A state’s first concern is survival, so it will do anything to accomplish that. However, when the extinction of mankind as a whole comes to order, states need to cooperate.

In this light Issam Makhoul speaks of a new nuclear order. The old nuclear order can be seen from the day of the first nuclear bombings until the beginning of the 21st century, after the ‘preventive war’ tactics of the Bush administration. He states that humankind is at the breach of a new era. Therefore a decision needs to be made: either more nuclear weapon states, vertical nuclear proliferation and the uncertainty concerning the future of humanity, or the decision for certainty of the continuation of mankind. Makhoul’s statements are contradicting the theory of Rublee, which claims that it is not all black and white. Norms are transmitted in different ways, where multilateral institutions can socialize states to be formed towards their preferences. It is not that simple as Makhoul suggests, there are many players that influence the nuclear process, when such a suggested decision cannot be easily made.

202 D. Boyd, ‘Unconventional thinking: Why Conventional Disarmament must Precede Nuclear Abolition’, p.52
203 D. Boyd, ‘Unconventional thinking: Why Conventional Disarmament must Precede Nuclear Abolition’, p.52
204 Appendix V, p. 68
206 He was a member of the International Planning Committee of the NPT Review Conference in 2010
207 Issam Makhoul, ‘From the Old Nuclear Order to a New Anti-Nuclear Order’, Palestine-Israel Journal of Politics, Economics and Culture, Vol. 16.3&4, p. 82-83
208 M.R. Rublee, ‘Nonproliferation Norms. Why States Choose Nuclear Restraint’, p. 3-4
5.2. The Global Zero Movement

The movement of Global Zero was initiated in December 2008. This movement enhances hundreds of leaders with different backgrounds all over the world, as well as hundreds of thousands citizens who all have the same goal: Global Zero. The goal of Global Zero is a nuclear weapons free world. To come to this goal, the movement is working for the verified elimination of these weapons in a phased manner.\(^{209}\) The nuclear threat includes nuclear terrorism and nuclear proliferation, which needs to be stopped and brought to abolition.

In addition to the Global Zero movement there is a Global Zero Commission of 23 military and political leaders which created a step-by-step plan to achieve a nuclear weapon free world. This plan can be seen (in short) below at 5.3., which covers a timeline of two decades. The Global Zero Commission consists of and has support of many former heads-of-state, ministers, advisors and military commanders and chiefs. The Commission is part of the Global Zero initiative – an international, nonpartisan effort formed in response to the growing threats of proliferation and nuclear terrorism and dedicated to achieving the phased, verified elimination of all nuclear weapons. Global Zero is spearheaded by a group of more than 200 leaders worldwide, including many who have worked at senior levels with issues of national security such as former heads of state, foreign ministers, defence ministers, national security advisors and top military commanders.\(^{210}\)

This Global Zero Commission “… believe that whatever stabilizing impact nuclear weapons had during the Cold War, any residual benefits of these arsenals are now overshadowed by the growing risk of proliferation and the related risk of nuclear terrorism.”\(^{211}\) The first steps of the Global Zero Action Plan are the reduction of Russian and US’ nuclear stockpiles and reduction of certain nuclear warheads. These steps are of grave significance as Russia and the US are key stakeholders in the nuclear world wide disarmament regime.\(^{212}\)

5.2.1. Nuclear Key Stakeholders

The role of the key stakeholders needs some explanation. Now the US and Russia are still key stakeholders, but unpredictable states as Iran, North-Korea are new stakeholders as can be seen in the previous chapter. The nuclear order and balance as such can not count on those countries, as mentioned earlier above in sections about nuclear learning. The most new


nuclear states need to learn how to coop with their nuclear weapons. The New START Treaty is linked to the progress of Global Zero, as world leaders push the ratification of the Treaty, and make it important by the way they mention the importance of the Treaty. So, by performing a speech act, the new START Treaty is essential for the road of Global Zero.

During the second Global Zero Summit in February 2010, President Obama urged the world to act as one in the battle against nuclear weapons. This statement was amongst other strong statements of Ban Ki-Moon (as mentioned in the chapter I) and President Medvedev. But, not only political leaders are backing up the Global Zero movement, hundreds of thousands of people from all over the world have signed the Global Zero declaration, and media attention is growing. The worldwide momentum for Global Zero is expanding. With media attention I do not mean solely newspapers and television reports. There are students who learn about Global Zero in their textbooks, and last but not least there is also a documentary movie made called the ‘Countdown to Zero’. This film hopes to bring awareness about the urgency of the nuclear threat, and is distributed internationally.^^213

In the East there seems to be paranoia about the Iranian bomb by officials from Saudi Arabia to Jordan and Bahrain. Those officials have called to end it by any means, including military force. King Abdullah of Saudi Arabia urged numerous times the United States to attack the Islamic republic to destroy its nuclear program. King Abdullah also warned that if Iran developed nuclear weapons “everyone in the region would do the same”.^^214

This will be as it may; Global Zero has weighed steps for the phased abolition of nuclear weapons, as it is made by the Global Zero Commission.^^215 This step-by-step plan has an outlined process which describes the preparation, negotiation, ratification and the implementation of getting to zero. These phases are the steps need to be taken for the elimination of all nuclear weapon in the world by an international legally binding agreement or “the Global Zero Accord”.^^216 Below the key elements of the step-by-step plan of the Global Zero movement are shown.

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5.3. The Four Phases of Global Zero

The key elements of the four phases are described below. These phases are also shown on the Global Zero website.  

- **Phase 1 (2010 – 2013)**

Awaiting the conclusion of the new START treaty, the US and Russia will reduce each to 1,000 warheads in total in their bilateral accord. This must be implemented by 2018. If it can be realized than earlier, but not later than the ratification this bilateral accord, all countries with nuclear arms must freeze their total number of nuclear warheads. They also have to commit themselves to participate in multilateral negotiations for proportionate reductions of stockpiles (as described in Phase 2). In this phase, the preparation for multilateral negotiations will be commenced.  

- **Phase 2 (2014 – 2018)**

The US and Russia will agree in a multilateral framework the reduction each to 500 total warheads each. This must be implemented by 2021, under the same conditions as in phase 1; all other nuclear countries must maintain their own stockpiles at the same level until 2018. After this, they will follow to proportionate reductions of their nuclear stockpiles until 2021. There must be a verification and enforcement system established with the right of inspection. The safeguards on the civilian nuclear fuel cycle must be strengthened to prevent the building of weapons with those materials.  

- **Phase 3 (2019 – 2023)**

The Global Zero Accord must be negotiated. The legally binding treaty will be signed by all nuclear countries possible in order to come to the phased and verified reduction of all those nuclear arsenals. This implies zero nuclear warheads by 2030.  

- **Phase 4 (2024 – 2030)**

The proportionate, phased and verified process of reducing and dismantling the nuclear arsenal in the world to zero by 2030 will be continued by the comprehensive verification and enforcement system. This system will prohibit the development and possession of nuclear weapons.  

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In these phases, not all the nuclear countries have to participate in the diplomatic process. Every country can join the diplomatic process at any point of the four phases. Because the accord is set up in phases, the openness and expansion of participation, it will prevent the stagnation of the entire process by temporarily withdrawal or holdouts. Nonetheless, it is not a quick process as every country must assess its own geopolitical strategies and security issues. The implementation will take years and the technical, and political preparations will have to be thoroughly negotiated. It will be a very long and a very difficult process to undertake.\footnote{Global Zero Action Plan, http://static.globalzero.org/files/docs/GZAP_6.0.pdf, p. 5-6}

As stated in the Global Zero Action Plan: “The message to any country that seeks to acquire nuclear weapons must be clear: the international community is resolved to join together in the interests of our common security to eliminate all nuclear weapons worldwide, and all nations must join in this urgent pursuit, with no exception.”\footnote{Global Zero Action Plan, http://static.globalzero.org/files/docs/GZAP_6.0.pdf, p. 6}

The NPT would be strengthened by the Global Zero talks, as the accord will be the fulfilment of Article VI of the NPT. Ours is not the only possible approach, but we hope that the process we have outlined here serves as a useful framework and encourages an international dialogue among leaders, experts and the public on strategies for achieving global zero.\footnote{Global Zero Action Plan, http://static.globalzero.org/files/docs/GZAP_6.0.pdf, p. 5-6, Appendix XI, p. 77}

The new START is important as starting point of phase 1 of the Global Zero Action Plan. When ratified by both the US and Russia, the reduction of the largest nuclear arsenals are a fact.

5.3.1. Opponents

Krauthammer of the Washington Post writes that there are greater problems than “top-priority” the signing of the New START. He points out that it does not matter what kind of weapon or nuclear power a state has, it matters what nature the regime that is controlling the weapons has.\footnote{Charles Krauthammer, The Irrelevance of START, Washington Post, http://www.thenewyorker.com/}

The recent tension between North-Korea and South-Korea makes the nuclear debate not that easy. North-Korea have shown to the Western world that it can produce nuclear energy and thereby enough for a weapon. The Iranian nuclear talks with the West were frozen, however Iran claimed has agreed to commence nuclear talks again with the US and
other nations.\textsuperscript{226} The problem stays the verification process and the fact that leaders can say one thing and act the opposite direction.

In contrast to these arguments, many influential global political and military leaders there are other organizations and companies backing up the Global Zero movement. The treaties mentioned in chapter 3 do help, especially if they have a good and solid verification program provided by the IAEA. Other means of support can be found at the Atomic Bulletin. They are reporting monthly about the worldwide nuclear threat, and promoting awareness of the urge for a nuclear weapons free world.\textsuperscript{227}

5.4. Global Zero and the Two Constructivist Models
When looking at imitation, learning, anarchy, is there a new process? If this is so, there must be structural change of the nuclear disarmament regime and discourse. Global Zero could than make a difference. The state identities are put aside by the Global Zero Movement and are entitled to mankind in its whole. However, the allies of the US and those who identify themselves with the ‘Western’ world see the US as a role-model. Imitation and social learning is not really new in this matter, as the NPT and other treaties have been signed. The urge to accomplish this goal is however more global and closer to the people worldwide than before. The collective identity of people in their battle against nuclear weapons is stronger than such calls in history, as with the Global Zero Movement hundreds of thousands of people have signed the declaration for Zero and becomes more reality to the common people in the entire world than before.

Wendt’s four forms of national interest; physical survival, autonomy, economic well-being, and collective self-esteem, all come together in the possible devastating outcome of a nuclear outburst. On the other hand, the three kinds of anarchy Hobbesian enmity, Lockean rivalry, and Kantian friend must be put aside and also need to come to Lockean / Kantian anarchy. It does not matter in what kind of the two anarchies the world or region is, as long as they can work together against nuclear proliferation. The Kantian anarchy is preferable because of its friendly cooperation, but in a Lockean anarchy states still can work together under treaties and agreements. The downside of the Lockean anarchy is that states act as rivals, so if one state is an important player in the regions and does proliferate or obtain nuclear weapons, other countries could feel the rivalry and could possibly secure their nation by doing the same. The anarchic structures do construct their elements, and these structures

\textsuperscript{226} CNN Wire Staff, ‘Iran to have Another Round of Nuclear Talks’, CNN, www.cnn.com, 30-11-10
\textsuperscript{227} http://www.thebulletin.org/
vary at the macro-level; therefore have multiple logics. The model of multiple realization of international culture gets its shape there.

The “Problem of Other Minds” should be emphasized here. This problem of a self-fulfilling prophecy is difficult to tangle. Actors act on the beliefs they have about others, which effect the actions and tend to reproduce those beliefs. The projection of the Self towards the Other, and intersubjectivity is a core understanding of social constructivism. This kind of “domino-effect” as I call can be seen in the support the Global Zero movement has generated. On the other hand, nuclear problematic states as North Korea and other countries that are not open for nuclear negotiations stay a bit closed and the effect of the Other Minds do not infiltrate that much in a positive way.

The Degree of society plays an important part in this issue. If there is a high degree of cultural internalization, cultural change is possible as structural change is possible as well. The three Degrees of society evolve upwards over time. The four master variables of the evolutionary model illustrate the process of change and can explain the shift that actors make and change in process and structure. This deepens the model of multiple realization of international culture and explains change in structure. Together with the theory of Maria Rublee, Wendt’s models got support as she looks at certain behaviour of citizens towards outcomes of politics, a regime can change or stay in tact. Hereby linking, consistency and activation determine the reaction towards nuclear policy. The main overlap in theories is that norms are taken into account and therefore the meaning what people give to outcomes or as input for policy.  

When looking at the graph of Appendix XI, the amount of nuclear weapons will diminish and eventually vanish out of the world by the Global Zero Accord. By stating these outcomes and by the realistic/activating steps that need to be taken, the meaning of Global Zero has gotten the shape of possible reality.

**Conclusion**

Can Global Zero be seen as a new nuclear page in history? When looking at the meaning of the nuclear disarmament regime and discourse, Global Zero is not really a new goal. Throughout history, the call for the abolition of nuclear weapons has been made before. The interpretation since Global Zero in 2008 is nonetheless of a different level; hundred thousands

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229 Appendix XI, p.77
of people are virtually mobilized and hundreds of high political leaders and decision-makers support the idea of Global Zero. The meaning that people now give to the Global Zero Movement is one of hope. There is a realistic plan to achieve zero nuclear weapons, which looks at the difficulties and does not underestimate the long duration of the negotiations and changes that need to be made.

Through the social constructivist view of Wendt, structural change is possible by cultural change. The model of multiple realization and the evolutionary model help to get more insight in the possibility of this change. Collective identity and social (nuclear) learning are important factors in those models. The interpretation of the Self and the Other determine the decisions made on security and nuclear issues. With the start of Global Zero, collective identity has gotten stronger. Many world leaders see nuclear weapons not as a necessary power, but as a transnational threat. Although nuclear weapons did create stabilization during the Cold War, the damage and downside of it can cause grave damage because of their immense power. There seems to be a shift in the way of thinking, because new important treaties are ratified as the new START, so phase 1 of Global Zero can be started. The NPT has the abolition of nuclear weapons as an important goal, however: the Global Zero accord implies major reduction of the two largest nuclear arsenals already as the first step.

The process of Global Zero can be evaluated on one level as a continuance of history: another treaty with an uncertain outcome. The shift in weaponry states have to make will cost a great amount of money and time. Nonetheless, when looking at another level of meaning and worldwide cooperation, there seems to be a change in the nuclear regime. The structural change is not there, but the change inside the regime can be seen. The disarmament discourse has changed as well. There is a change in thoughts of the nuclear disarmament discourse. Only time can tell if this will lead to a new structure. With the start of Global Zero the nuclear disarmament discourse has a new impact, but not a new structure. More and more world leaders want to live in a world without nuclear weapons. There are other forms of weapons that give power, without the devastating worldwide effects. This change of thinking is not enough to change the nature of the nuclear disarmament regime. More hard evidence is needed to prove a structural change of this regime.

The Global Zero Commission welcomes all input and viewpoints, as they do not see themselves as the only possible approach. Global Zero therefore can be seen as a framework; wherein to political leaders have the power to achieve the zero nuclear weapon goal.\textsuperscript{230} When

looking at Appendix X, the tables of SIPRI show a diminishing amount of nuclear weapons in the world. It shows that the treaties made, did help reducing the nuclear arsenal. When people and political leaders put their words into action, the meaning that Global Zero has could become real. If the Global Zero Accord will be ratified in the couple of decennia to come, the possibility of change towards a nuclear weapon free world will be higher.

231 Appendix X, p. 73
Chapter 6: Conclusion

The call for Global Zero by President Obama is an important mark in the history of nuclear weapon issues. This thesis investigated how the social constructivist theory of Alexander Wendt would evaluate this initiative. Is Global Zero a new nuclear regime? Can there be a world without nuclear weapons? The previous chapters have discussed these questions. The difficulty with the abolishment of nuclear weapons is that the knowledge how to build them exists. You cannot “un-invent” nuclear weapons.

This thesis started out with an introduction to the theory and case. The motivation and methodology was discussed to state why the investigation of Global Zero through a social constructivist theory is interesting. The second chapter elaborated on the social constructivist theory of Alexander Wendt. His theory emphasizes philosophical-scientific elements when investigating problems. The main elements of this social constructivist theory used in this thesis are two models. These models, the multiple realization of international culture model and the evolutionary model, show the core elements of the possibility of structural change. When it can be concluded that structural change took place, Global Zero is a new nuclear regime, a new page in history.

In search of structural change, the existing nuclear regime had to be examined. This was done in chapter 3. This chapter has given a historical overview of the nuclear disarmament process. The nuclear disarmament timeline has been divided into blocks, where each block has its own meaning and “theme” of nuclear disarmament. This means that some blocks were characterized by a great amount of treaties. Others were characterized by the proliferation of nuclear weapons. After this historical timeline the social constructivist elements of the two models were applied to those blocks to examine change and process.

When looking at these blocks from a social constructivist perspective, the different anarchies of the multiple realization of international culture model were present. Combined with the main elements of the evolutionary model, the shift in nuclear regime has been shown. It shifted, however, on two levels. On the one hand the former superpowers were moving closer to each other, having more elements of the evolutionary model in common. These elements of common-fate, interdependence, homogeneity and self-restraint have been getting stronger after the Cold War. President Obama and President Medvedev’s call for Global Zero seemed to follow this feeling of common-fate. This shift brought those powers and their allies
more towards Lockean/Kantian anarchy than the Hobbesian (/Lockean) anarchy they had been in before.

On the other hand, the number of “rogue” states like Iran has been growing after the Cold War. The threat of these states and terrorist groups to the international theatre has expanded. The nuclear disarmament regime shows a new phase in block 7 of the historical timeline, but it does not show a new regime. The historical timeline has a new block, but this is just a continuity of the regime. After investigating the nuclear disarmament regime, the nuclear disarmament discourse had to be evaluated as well.

The perception, in this case of nuclear disarmament, is a crucial part in the social constructivist view. Therefore various authors were discussed to analyse different views on the nuclear disarmament issue. Different nuclear countries were evaluated too, because they invoke different perceptions by their nuclear history and nuclear actions. Due to the cooperation of the former superpowers and their allies with the Global Zero movement, the way of thinking in the nuclear disarmament discourse has changed. It shows that there is a new “wave” of thought, but not that there is a new structure by Global Zero.

The nuclear stake-holders seemed to have a large influence on the nuclear perception, as they affect other nuclear and non-nuclear states with their perception of the Self and the other. These perceptions determine the nuclear actions of these states and the states that they assist. The nuclear perception did change after the call for Global Zero, because more and more people are supporting a world free of nuclear weapons. This means that more people around the world give voice to their thoughts about the necessity of the abolishment of nuclear weapons. People in history could have had thoughts like these as well, but could be unable to express themselves. So also because the perception is hard to measure, it cannot be shown that there is a new structure or new discourse.

Following Rublee’s elements of persuasion, social conformity and identification, there can be seen an enlargement of the amount of states acting in the same way towards nuclear abolition. She stays nonetheless close to the social constructivist conclusion of change. When applying linking, consistency and activation to Global Zero, it does have a chance of success. The action and reaction of states towards the Global Zero accord will be of grave importance, as it could be formed into a new norm in the nuclear disarmament discourse.

When examining the Global Zero process, it appeared that the abolition of nuclear weapons was not a new theme. Nonetheless, the scope and interpretation of the abolishment of nuclear weapons by the Global Zero Movement is different than before. The nuclear disarmament regime has changed, and the nuclear disarmament discourse changed its
interpretation and meaning in a certain way. This does not mean that there is structural change. The change of thoughts combined with the historical continuity mean that there is a new phase insight this regime.

Global Zero has influenced the world in different ways as mentioned in previous chapters. The uncertain factor of the “rogue” states and terrorist groups will remain, but the influence of the greater nuclear countries is high. The world is interdependent, and so the states with uncertain nuclear programs influence the decision-makers around the world. The perception and interconnection of the majority of nuclear states have not significantly changed by the Global Zero Movement.

By nuclear learning the perception of the devastating effects of nuclear weapons became nonetheless firmer and world leaders perceive the nuclear threat as unnecessary and dangerous. The former superpowers have a big influence on the process. If they continue to act and react in the way they are acting on the nuclear issue now, the majority of the world could shift into a Kantian anarchy with the highest form, the Third Degree, of the evolutionary model.

Examining Wendt’s models, Global Zero fits best with the Kantian anarchy. It can be discussed if we have to create a Kantian anarchy in order to achieve Global Zero. Or is Global Zero a precondition for achieving a Kantian anarchy? A Kantian order can only exist when there is no threat, so this would be most likely when there are no nuclear weapons at all. Therefore, Global Zero is a precondition for the Kantian anarchy. The shift into this anarchy can thus be made only when Global Zero is achieved. Thereby the signing of Global Zero cannot cause structural change, but its effects can. This means that through the social constructivist view of Wendt a world what Global Zero implies cannot come into existence straight away, because it has not made a structural change in the nuclear disarmament regime and discourse yet.
### Appendix I


<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1938</td>
<td>Scientists Hahn and Strassman observed for the first time the phenomenon of a chain reaction of nucleus fission</td>
</tr>
<tr>
<td>1945</td>
<td>The Manhattan Project; building of a nuclear bomb</td>
</tr>
<tr>
<td>1945</td>
<td>First nuclear bomb used by the US on Japan; Hiroshima, Nagasaki in August</td>
</tr>
<tr>
<td>1945</td>
<td>Nuclear Proliferation Act, Trinity Test</td>
</tr>
<tr>
<td>1946</td>
<td>GA installed AEC, Baruch Plan, McMahon Act</td>
</tr>
<tr>
<td>1949</td>
<td>The Soviet Union’s first nuclear tests; Joe-1. (Klaus Fuchs).</td>
</tr>
<tr>
<td>1953</td>
<td>Soviets test a hydrogen (H-) bomb of their own, role of Sakharov</td>
</tr>
<tr>
<td>1953</td>
<td>Eisenhower’s “Atoms for Peace”; call for the founding of the IAEA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956</td>
<td>US and SU appear eager to avoid direct confrontation in regional conflicts such as the Egyptian-Israeli dispute. Joint projects that build trust and constructive dialogue between third parties also quell diplomatic hostilities.</td>
</tr>
<tr>
<td>1957</td>
<td>establishment of IAEA</td>
</tr>
<tr>
<td>1963</td>
<td>Partial Test Ban Treaty or Limited Test Ban Treaty (LTBT), which ends all atmospheric nuclear testing. It signals awareness among the Soviets and United States that they need to work together to prevent nuclear annihilation.</td>
</tr>
<tr>
<td>1966</td>
<td>India and US nuclear pact</td>
</tr>
<tr>
<td>1968</td>
<td>France and China develop nuclear weapons to assert themselves as global players, did not sign the LTBT. (China in 1996 CTBT)</td>
</tr>
<tr>
<td>1969</td>
<td>Nearly all of the world’s nations come together to sign the Nuclear Non-Proliferation Treaty. Israel, India, and Pakistan however refused to sign the treaty.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>Sino-Soviet crisis</td>
</tr>
<tr>
<td>1972</td>
<td>US and SU attempt to curb the race for nuclear superiority by signing the Strategic Arms Limitation Treaty (SALT) and the Anti-Ballistic Missile (ABM) Treaty. SALT limits the number of ballistic missile launchers either country can possess, and the ABM Treaty stops an arms race in defensive weaponry from developing.</td>
</tr>
<tr>
<td>1974</td>
<td>South Asia gets the Bomb, as India tests its first nuclear device. By the deployment of multiple independently targetable re-entry vehicles (MIRV), US and SU can now load their intercontinental ballistic missiles with more nuclear warheads than before.</td>
</tr>
<tr>
<td>1979</td>
<td>SALT II</td>
</tr>
<tr>
<td>1981</td>
<td>The Soviet invasion of Afghanistan hardens the U.S. nuclear posture: President Carter pulls the US from the Olympics Games in Moscow and considers ways in which the US could win a nuclear war.</td>
</tr>
<tr>
<td>1982</td>
<td>Geneva intermediate nuclear missiles negotiation, Kvitinsky and Nitze’s “Walk in the woods”.</td>
</tr>
<tr>
<td>1986</td>
<td>Reykjavik summit talks between Reagan and Gorbachev.</td>
</tr>
</tbody>
</table>
1986: Chernobyl nuclear power plant disaster in Soviet Republic Ukraine
1988: US and SU sign the historic Intermediate-Range Nuclear Forces Treaty (INF), the first agreement to actually ban a whole category of nuclear weapons.

1989: Berlin Wall falls, symbolically ending the Cold War.
1991: “Second nuclear age”
1991: Strategic Arms Reduction Treaty, START. With the Cold War officially over, START greatly reduces the number of strategic nuclear weapons deployed by the US and SU.
1992: With the break-up of the SU, Belarus, Kazakhstan, Russia and the Ukraine became new states with strategic nuclear weapon. Through the Lisbon Protocol, signed in 1992, these states became parties to START I. The treaty did not enter into force until these new states ratified the treaty and signed the NPT as non-nuclear states. Belarus, Kazakhstan and the Ukraine have removed all their nuclear warheads.
1993: START II
1994: Renewed Non-Proliferation Act

1995: More than 40,000 nuclear weapons remain worldwide. MTCR
1996: NPT renewal, the world renewed the treaty indefinitely. Major non-signers of the NPT include India, Pakistan, Cuba, and Israel.
1996: START II ratified by US
1996: CTBT, Comprehensive Test Ban Treaty. The United States signed the treaty but failed to ratify the treaty. The three nations that have neither signed nor ratified the treaty are India, Pakistan, North Korea.

1998: India and Pakistan stage nuclear weapons tests only three weeks apart; US by NPA lay sanctions on India and Pakistan. US and Russia however together, they still maintain 7,000 warheads ready to fire at each other within 15 minutes.
2000: START II ratified by Russia as well.
2002: US rejects a series of arms control treaties and announces it will withdraw from the Anti-Ballistic Missile Treaty. (ABM)
2002: Strategic Offensive Reductions (SORT) or the Moscow Treaty, both sides agreed to reduce operationally deployed strategic nuclear warheads to 1,700 from 2,200 by 2012.
2003: Non-Aligned Movement (NAM)
2004: Kahn from Pakistan transferred nuclear material and technology to Libya, North-Korea and Iran.
2007: North Korea conducts a nuclear test, and many in the international community worry that Iran plans to acquire the Bomb.

2008: Barack Obama becomes the first U.S. president to publicly call for a nuclear-weapon-free world: Global Zero
2010: Follow-on agreement to the Strategic Arms Reduction Treaty is signed on the 8th of April, and more negotiations for further reductions in the U.S. and Russian nuclear arsenal are already planned. The START III treaty creates a ceiling of 2,000-2,500 strategic weapons.
### Appendix II

Source: D. Verdier, ‘Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime’, p. 463

<table>
<thead>
<tr>
<th>Variables</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIVALRY (dummy)</td>
<td>−42</td>
</tr>
<tr>
<td>DEMOCRATIC NEIGHBORS (from none to all)</td>
<td>+4</td>
</tr>
<tr>
<td>SUPERPOWER’ DEFENSE GUARANTEE (dummy)</td>
<td>+73</td>
</tr>
<tr>
<td>RIO</td>
<td>−57</td>
</tr>
<tr>
<td>U.S. AID PER CAPITA (one SD increase from mean)</td>
<td>+3</td>
</tr>
<tr>
<td>1977–1991 (dummy)</td>
<td>−50</td>
</tr>
<tr>
<td>TOTAL RATIFICATIONS (one SD increase from mean)</td>
<td>+5</td>
</tr>
<tr>
<td>GDP PER CAPITA (one SD increase from mean)</td>
<td>−35</td>
</tr>
<tr>
<td>POPULATION (one SD increase from mean)</td>
<td>−22</td>
</tr>
</tbody>
</table>

*Notes:* The change is calculated according to the formula: \([\exp(\beta X_1) - \exp(\beta X_2)]/\exp(\beta X_2)\) * 100, with beta the estimated coefficient, \(X_1\) and \(X_2\) respectively the mean and the mean augmented by a standard deviation for continuous variables, while 0 and 1 for dummy variables. SD = standard deviation.
Appendix III

ACA report card with state by state grades on nuclear behaviour. Where A refers to the “highest” score and D to the “lowest”. Source: 232

<table>
<thead>
<tr>
<th>Grade</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>State is currently adhering to or exceeding the international standard.</td>
</tr>
<tr>
<td>B</td>
<td>State has taken significant steps to adhere to the international standard.</td>
</tr>
<tr>
<td>C</td>
<td>State has taken limited or declaratory steps to adhere to the international standard.</td>
</tr>
<tr>
<td>D</td>
<td>State has taken no action to adhere to the international standard.</td>
</tr>
<tr>
<td>F</td>
<td>State has taken steps inconsistent with or has rejected the international standard.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard</th>
<th>Nuclear-Weapon States</th>
<th>Non-NPT States</th>
<th>States of Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banning Nuclear Testing</td>
<td>China</td>
<td>France</td>
<td>Russia</td>
</tr>
<tr>
<td>Ending Fissile Material Production for Weapons</td>
<td>B</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Reducing Nuclear Weapons Alert Levels</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Nuclear Force Reductions</td>
<td>F</td>
<td>C+</td>
<td>B-</td>
</tr>
<tr>
<td>Negative Security Assurances</td>
<td>B+</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Nuclear-Weapon-Free Zones</td>
<td>B</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>IAEA Safeguards</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Nuclear Weapon-Related Export Controls</td>
<td>C-</td>
<td>A</td>
<td>C</td>
</tr>
<tr>
<td>Criminalization and Illicit Trafficking Commitments</td>
<td>B+</td>
<td>B+</td>
<td>A</td>
</tr>
<tr>
<td>Overall Grade</td>
<td>B-</td>
<td>B</td>
<td>B</td>
</tr>
</tbody>
</table>

* This assessment does not take into account steps Pakistan has taken to address risks related to its internal political instability and the security of its nuclear arsenal, facilities, and material. The scope of this report does not address relative nuclear security needs or evaluate the strength of a country's nuclear security controls, only the scope of the controls in place as they relate to recognized international standards.

**Appendix IV**


<table>
<thead>
<tr>
<th>Nuclear Stockpiles and Storage Locations Worldwide</th>
<th>2007</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>12,070</td>
<td>19,775</td>
</tr>
<tr>
<td>Russia</td>
<td>22,500</td>
<td>10,240</td>
</tr>
<tr>
<td>Britain</td>
<td>800</td>
<td>260</td>
</tr>
<tr>
<td>France</td>
<td>500</td>
<td>450</td>
</tr>
<tr>
<td>China</td>
<td>450</td>
<td>400</td>
</tr>
<tr>
<td>Total</td>
<td>36,000</td>
<td>9938</td>
</tr>
</tbody>
</table>

* A portion awaiting final dismantlement. In the case of the U.S. another portion is part of a reserve hedge.

**Appendix V**


### Estimates of the U.S. Nuclear Weapons Stockpile, 2007 and 2012

<table>
<thead>
<tr>
<th>Warhead Type</th>
<th>2007</th>
<th>End 2012</th>
<th>Warheads to be Dismantled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Active Deployed</td>
<td>Responsive/Inactive*</td>
<td>Total</td>
</tr>
<tr>
<td>B61-3</td>
<td>200</td>
<td>186</td>
<td>386</td>
</tr>
<tr>
<td>B61-4</td>
<td>200</td>
<td>204</td>
<td>404</td>
</tr>
<tr>
<td>B61-7</td>
<td>215</td>
<td>224</td>
<td>439</td>
</tr>
<tr>
<td>B61-10</td>
<td>0</td>
<td>206</td>
<td>206</td>
</tr>
<tr>
<td>B61-11</td>
<td>20</td>
<td>21</td>
<td>41</td>
</tr>
<tr>
<td>W62</td>
<td>325</td>
<td>255</td>
<td>580</td>
</tr>
<tr>
<td>W76</td>
<td>1344</td>
<td>1686</td>
<td>3030</td>
</tr>
<tr>
<td>W76-1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>W78</td>
<td>550</td>
<td>244</td>
<td>794</td>
</tr>
<tr>
<td>W80-0</td>
<td>100</td>
<td>189</td>
<td>289</td>
</tr>
<tr>
<td>W80-1</td>
<td>1452</td>
<td>354</td>
<td>1806</td>
</tr>
<tr>
<td>B83-0</td>
<td>0</td>
<td>298</td>
<td>298</td>
</tr>
<tr>
<td>B83-1</td>
<td>323</td>
<td>3</td>
<td>326</td>
</tr>
<tr>
<td>W84</td>
<td>0</td>
<td>383</td>
<td>383</td>
</tr>
<tr>
<td>W87</td>
<td>50</td>
<td>502</td>
<td>552</td>
</tr>
<tr>
<td>W88</td>
<td>384</td>
<td>20</td>
<td>404</td>
</tr>
<tr>
<td>Total</td>
<td>5163</td>
<td>4775</td>
<td>9938</td>
</tr>
</tbody>
</table>

*W87-1 and W88-1 are not included in the total.**
Appendix VI


Table 8:

Table 10:
Host Country Air Bases With Nuclear Weapons
Appendix VII

Figure 1: Substantive Relationship between Years of Nuclear Weapons Possession and Militarized Dispute Reciprocation

- Probability of Dispute Reciprocation vs. Years of Nuclear Weapons Possession
  - Solid line: Only Side A Has Nuclear Weapons
  - Dashed line: Only Side B Has Nuclear Weapons
Appendix VIII

Source: Matthew Kroenig, ‘Exporting the Bomb: Technology Transfer and the Spread of Nuclear Weapons’, p. 63 (126)

![Graph](image)

**FIGURE 2.1.** Effect of power projection on sensitive nuclear assistance, 1951–2000.

Note: The probabilities are calculated using the Robust estimates in model 2 of tables 2.3. Enemy is set to one, Superpower prot is set to zero, and all other variables are held at their mean. Relative power is measured as the power of the supplier, discounted by the distance between the supplier and the recipient, minus the power of the recipient. The unit of measurement is the proportion of overall power in the international system. A Relative power score of -0.5 indicates that, after discounting by distance, the supplier possesses 10 percent less of the total power in the international system than the recipient. Negative values of Relative power suggest that the supplier lacks the ability to project power over the recipient. Dyads years in this category include France-Japan, 1973 (−0.056) and Pakistan-North Korea, 1996 (−0.011). A Relative power score of 0.1 indicates that, after discounting by distance, the supplier possesses 10 percent more of the overall power in the international system than the potential recipient. Positive values of Relative power suggest that the supplier possesses the ability to project power over the recipient. Dyads years in this category include France-Belgium 1950 (0.015) and the United States-North Korea 1951 (0.039). Dashed lines represent the 95 percent confidence interval.
Appendix IX


### A

**Table 10A.1. World nuclear forces, January 2002**

<table>
<thead>
<tr>
<th>Country</th>
<th>Strategic warheads</th>
<th>Non-strategic warheads</th>
<th>Total warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>6480</td>
<td>1120</td>
<td>7600</td>
</tr>
<tr>
<td>Russia</td>
<td>4951</td>
<td>3380</td>
<td>8331</td>
</tr>
<tr>
<td>UK</td>
<td>185</td>
<td></td>
<td>185</td>
</tr>
<tr>
<td>France</td>
<td>348</td>
<td></td>
<td>348</td>
</tr>
<tr>
<td>China</td>
<td>282</td>
<td>120</td>
<td>402</td>
</tr>
<tr>
<td>India</td>
<td></td>
<td></td>
<td>(30–35)$^a$</td>
</tr>
<tr>
<td>Pakistan</td>
<td></td>
<td></td>
<td>(24–48)$^a$</td>
</tr>
<tr>
<td>Israel</td>
<td></td>
<td></td>
<td>(–200)$^a$</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>~17150</td>
</tr>
</tbody>
</table>

$^a$ By the number of deployed warheads. The stockpiles of India, Pakistan and Israel are thought to be only partly deployed.

### B

**Table 15A.1. World nuclear forces, by number of deployed warheads, January 2004**

<table>
<thead>
<tr>
<th>Country</th>
<th>Strategic warheads</th>
<th>Non-strategic warheads</th>
<th>Total warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>5886</td>
<td>1120</td>
<td>7006$^a$</td>
</tr>
<tr>
<td>Russia</td>
<td>4422</td>
<td>3380</td>
<td>7802$^b$</td>
</tr>
<tr>
<td>UK</td>
<td>185</td>
<td></td>
<td>185</td>
</tr>
<tr>
<td>France</td>
<td>348</td>
<td></td>
<td>348</td>
</tr>
<tr>
<td>China</td>
<td>282</td>
<td>120</td>
<td>402</td>
</tr>
<tr>
<td>India</td>
<td></td>
<td></td>
<td>(30–40)$^c$</td>
</tr>
<tr>
<td>Pakistan</td>
<td></td>
<td></td>
<td>(30–50)$^c$</td>
</tr>
<tr>
<td>Israel</td>
<td></td>
<td></td>
<td>(~200)$^c$</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>~16033</td>
</tr>
</tbody>
</table>

$^a$ The total US stockpile, including reserves, contains c. 10,400 warheads. In addition, 5000 ‘pits’ (plutonium cores) are in storage as a strategic reserve, while another 7000 pits make up most of the 34 tons of weapon-grade plutonium which the USA has declared in excess of its military requirements.

$^b$ The total Russian stockpile contains 17,000 warheads, of which c. 9200 are in storage and/or awaiting dismantlement.

$^c$ The stockpiles of India, Pakistan and Israel are thought to be only partly deployed.
Table 12A.1. World nuclear forces, by number of deployed warheads, January 2005

<table>
<thead>
<tr>
<th>Country</th>
<th>Strategic warheads</th>
<th>Non-strategic warheads</th>
<th>Total number of deployed warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>4,216</td>
<td>680</td>
<td>4,896(^a)</td>
</tr>
<tr>
<td>Russia</td>
<td>3,980</td>
<td>3,380</td>
<td>7,360(^b)</td>
</tr>
<tr>
<td>UK</td>
<td>185</td>
<td>–</td>
<td>185</td>
</tr>
<tr>
<td>France</td>
<td>348</td>
<td>–</td>
<td>348</td>
</tr>
<tr>
<td>China</td>
<td>282</td>
<td>120</td>
<td>~400</td>
</tr>
<tr>
<td>India</td>
<td>–</td>
<td>–</td>
<td>(30–40)(^c)</td>
</tr>
<tr>
<td>Pakistan</td>
<td>–</td>
<td>–</td>
<td>(30–50)(^c)</td>
</tr>
<tr>
<td>Israel</td>
<td>–</td>
<td>–</td>
<td>(~200)(^c)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>~13,470</td>
</tr>
</tbody>
</table>

\(^a\) The total US stockpile, including reserves, contains c. 10,350 warheads. In addition, 5,000 plutonium cores (pits) are in storage as a strategic reserve, while another 7,000 pits make up most of the 34 tons of weapon-grade plutonium declared in excess of military needs.

\(^b\) The total Russian stockpile contains c. 16,000 warheads, of which c. 8,800 are in storage or awaiting dismantlement.

\(^c\) The stockpiles of India, Pakistan and Israel are thought to be only partly deployed.
### Table 13A.1. World nuclear forces, by number of deployed warheads, January 2006

<table>
<thead>
<tr>
<th>Country</th>
<th>Strategic warheads</th>
<th>Non-strategic warheads</th>
<th>Total number of warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>5,021</td>
<td>500</td>
<td>5,521&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Russia</td>
<td>3,352</td>
<td>2,330</td>
<td>5,682&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>UK</td>
<td>185&lt;sup&gt;d&lt;/sup&gt;</td>
<td>–</td>
<td>185</td>
</tr>
<tr>
<td>France</td>
<td>348</td>
<td>–</td>
<td>348</td>
</tr>
<tr>
<td>China</td>
<td>~130</td>
<td>?&lt;sup&gt;e&lt;/sup&gt;</td>
<td>~130</td>
</tr>
<tr>
<td>India</td>
<td>–</td>
<td>–</td>
<td>~50&lt;sup&gt;f&lt;/sup&gt;</td>
</tr>
<tr>
<td>Pakistan</td>
<td>–</td>
<td>–</td>
<td>~60&lt;sup&gt;f&lt;/sup&gt;</td>
</tr>
<tr>
<td>Israel</td>
<td>–</td>
<td>–</td>
<td>100–200&lt;sup&gt;f&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>~12,100</td>
</tr>
</tbody>
</table>

<sup>a</sup> North Korea claimed in 2005 that it had developed nuclear weapons, although there is no public information to verify this claim.

<sup>b</sup> The total US stockpile, including reserves, contains c. 10,000 warheads. In addition, 5,000 plutonium cores (pits) are in storage as a strategic reserve, while another 7,000 pits make up most of 34 tons of weapon-grade plutonium declared in excess of military needs.

<sup>c</sup> The total Russian stockpile contains roughly 16,000 warheads, of which c. 10,100 are in storage and/or awaiting dismantlement.

<sup>d</sup> Some warheads on British strategic submarines have sub-strategic missions.

<sup>e</sup> The existence of operational Chinese non-strategic warheads is uncertain.

<sup>f</sup> The stockpiles of India, Pakistan and Israel are thought to be only partly deployed.
Table 8.1. World nuclear forces, by number of deployed warheads, January 2009

All figures are approximate.

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of first nuclear test</th>
<th>Strategic warheads</th>
<th>Non-strategic warheads</th>
<th>Total deployed warheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>1945</td>
<td>2202</td>
<td>500</td>
<td>2702(^b)</td>
</tr>
<tr>
<td>Russia</td>
<td>1949</td>
<td>2787</td>
<td>2047</td>
<td>4834(^c)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1952</td>
<td>160(^d)</td>
<td>-</td>
<td>(160)</td>
</tr>
<tr>
<td>France</td>
<td>1960</td>
<td>300</td>
<td>-</td>
<td>(300)</td>
</tr>
<tr>
<td>China</td>
<td>1964</td>
<td>(186)</td>
<td>..(^e)</td>
<td>(186)</td>
</tr>
<tr>
<td>India</td>
<td>1974</td>
<td>-</td>
<td>-</td>
<td>(60–70)(^f)</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1998</td>
<td>-</td>
<td>-</td>
<td>(60)(^f)</td>
</tr>
<tr>
<td>Israel</td>
<td>..</td>
<td>-</td>
<td>-</td>
<td>(80)(^f)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>(8 392)</strong></td>
</tr>
</tbody>
</table>

\(^a\) North Korea conducted a nuclear test explosion in 2006 but there is no public information to verify that it has operational nuclear weapons.

\(^b\) The total US inventory is c. 9400 warheads, of which c. 5200 are in the Department of Defense stockpile (c. 2700 operational and c. 2500 in reserve) and 4200 warheads are scheduled to be dismantled by 2022.

\(^c\) The total Russian inventory contains c. 13 000 warheads, of which c. 8166 are in reserve or awaiting dismantlement.

\(^d\) Some warheads on British strategic submarines have sub-strategic missions previously covered by tactical nuclear weapons.

\(^e\) The existence of operational Chinese non-strategic warheads is uncertain.

\(^f\) The stockpiles of India, Pakistan and Israel are thought to be only partly deployed.
### Table 9.1. Summary of Russian–US nuclear arms reduction treaties’ force limits

<table>
<thead>
<tr>
<th>Treaty</th>
<th>Date of signature/entry into force</th>
<th>Total treaty-accountable nuclear warheads</th>
<th>Total strategic nuclear delivery vehicles&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Expiration date</th>
</tr>
</thead>
<tbody>
<tr>
<td>START II</td>
<td>3 Jan. 1993/1 June 2003&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3000–3500</td>
<td>None&lt;sup&gt;d&lt;/sup&gt;</td>
<td>. .</td>
</tr>
<tr>
<td>START follow-on</td>
<td>8 April 2010</td>
<td>1500</td>
<td>800 (700 deployed)</td>
<td>10 years after entry into force</td>
</tr>
</tbody>
</table>

SORT = Strategic Offensive Reductions Treaty (Moscow Treaty); START = Strategic Arms Reduction Treaty.

<sup>a</sup> Strategic nuclear delivery vehicles are intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs) and long-range bombers.

<sup>b</sup> In May 1992 Belarus, Kazakhstan and Ukraine signed the Lisbon Protocol with Russia and the USA, making all 5 countries parties to START I.

<sup>c</sup> The START II Treaty never entered into force.

<sup>d</sup> START II would have prohibited the deployment of multiple independently targetable re-entry vehicles (MIRVs) on ICBMs and limited parties to 1700–1750 SLBMs each.


### Appendix X

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