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Arms Control and Disarmament: Legitimacy, War, and Peace

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Honors Thesis

Presented to the Department of International Studies

Macalester College

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Abstract

The 2013 Noble Peace Prize was awarded to the Organization for the Prohibition of Chemical Weapons, the same year that events in the Syrian Civil War made clear the difficulties of implementing global disarmament and the imperative for doing so. In relation to this situation, my thesis asks if arms control and disarmament reduce conflict and tensions between states. Attempts at chemical weapons disarmament have been relatively successful but global disarmament faces major obstacles that will be difficult to overcome. To be sure, arms control and disarmament can be beneficial to peace: they are not a cause of war, can lessen the devastation of war, and even the potential for war to occur. If certain weapons are removed from the world, or even tightly controlled, then lives will be saved. But the benefits are limited, and even successful arms control is only minimally effective on its own. Removing chemical weapons eliminates one potential point of contention. However, nuclear arms control coupled with deterrence seems to be partially successful in preventing conflict. This combination minimizes warfare between nuclear powers, decreases tensions, and lessens lower-level conflict. In the end, arms control can only prevent war in conjunction alongside political and other military factors and, still, is far from a guarantor of peace.

“The World is over-armed and peace is under-funded.” -Ban-Ki Moon

“It is my fervent goal and hope...that we will some day no longer have to rely on nuclear weapons to deter aggression and assure world peace. To that end the United States is now engaged in a serious and sustained effort to negotiate major reductions in levels of offensive nuclear weapons with the ultimate goal of eliminating these weapons from the face of the earth.”

Ronald Reagan, October 20, 1986

*Bent double, like old beggars under sacks,
Knock-kneed, coughing like hags, we cursed
through sludge, Till on the haunting flares
we turned our backs And towards our
distant rest began to trudge. Men marched
asleep. Many had lost their boots But limped
on, blood-shod. All went lame; all blind;
Drunk with fatigue; deaf even to the hoots
Of tired, outstripped Five-Nines that
dropped behind.*

*Gas! Gas! Quick, boys!—An ecstasy of
fumbling, Fitting the clumsy helmets just in
time; But someone still was yelling out and
stumbling And flound'ring like a man in fire
or lime... Dim, through the misty panes and
thick green light, As under a green sea, I
saw him drowning.*

*In all my dreams, before my helpless sight,
He plunges at me, guttering, choking,
drowning. If in some smothering dreams you
too could pace Behind the wagon that we
flung him in, And watch the white eyes
writhing in his face,*

*His hanging face, like a devil's sick of sin; If
you could hear, at every jolt, the blood
Come gargling from the froth-corrupted lungs,*

*Obscene as cancer, bitter as the cud Of vile,
incurable sores on innocent tongues,—My
friend, you would not tell with such high zest
To children ardent for some desperate glory,
The old Lie: Dulce et decorum est Pro
patria mori.*

-Wilfred Owen

Chapter One: Introduction

The Problem

The world is awash in armaments. It is estimated that there are at least 875 million guns in the world, almost certainly more. And there are close to 15,000 nuclear weapons around the world, a significant decrease from a height of over 60,000 during the Cold War, but still enough to destroy the world. There has been war somewhere throughout the world during the entire post-World War II era. Thus, war is a major concern and the armaments through which it is waged become a fundamental part of this problem. Therefore, arms control and disarmament become a means through which to potentially limit the chance of war occurring, or at least to mitigate the effects of war. In this thesis, I will address the following question: *have arms control and disarmament reduced aggression and tensions between states?* I hope to answer this question and examine what makes multilateral arms control and disarmament effective, particularly what role the geographical location of an agreement, the sort of weapons being restricted (or eliminated), how they are restricted, and what role the support or lack thereof of state and non-state actors plays in a restriction's effectiveness. I plan to closely analyze two case studies: the chemical weapons convention, and the Strategic Arms Reduction Treaties (START). At the end, I plan to conclude whether arms control and disarmament are effective at prolonging the reign of peace.

Why it Matters?

The study of arms control and disarmament is fascinating on both existential and intellectual levels. War is of vital global concern and limiting war is of utmost importance and a worthwhile goal to strive for. War in particular has always been an interest of mine, as have the means of limiting its horror. Arms control is one method for the minimization of war. Moreover weapons technology has also been one of my interests, as it contributes towards considerable suffering throughout the world. Arms control and disarmament, much like war, have a direct impact on humanity as whole and a direct impact on individuals.

As a citizen of the United States hailing from a community and State (New Mexico) that relies to a substantial degree on military spending and the arms industry, including the industry relating to nuclear weapons, I am aware of the important, often beneficial, role that the military-industrial complex plays in the economy and many people's lives even while it is devastating for many others.

Arms control and disarmament also involve cooperation between various state-actors as well as the involvement of non-state actors. An examination of this phenomenon is an eye-opening lenses from which to scrutinize International Studies. Arms control seeks to reduce interstate tensions and change the political landscape of state interaction whilst relying heavily on internal and international state politics. Here, then, one enters into international relations and diplomacy. All of the above delineate that an examination of arms control and disarmament grants an opportunity to explore durable issues, including war and peace, which are of great personal interest.

Methodology

The methodology of this thesis will consist of archival research and case studies. I will explore some treaties and export control regimes, the effectiveness of enforcement, and relevant theory and politics. I will examine specific case studies in order to see if these support my initial intuition. Though I want to be aware of a wide array of cases of attempts at arms control and disarmament, I will be focusing on the START treaties and the Chemical Weapons Convention. In reviewing these cases, I will identify the reasons behind why they function as they do and what plausibly explains their successes and failures. Much of this will be a comparison, identifying commonalities and differences between situations and what underlies them. I intend to examine arms control and disarmament at the state and global levels (rather than purely domestic arms control) and thus the relations between nation-states, particularly those with considerable hard power. Another point of inspection will be how the state power and inter-state relations determine the structure and success of arms control and disarmament agreements. I intend to evaluate actual treaties and other legal documentation regarding both arms control and disarmament.

Key Concepts

Arms control and disarmament, war, peace, the state, and proliferation are the key concepts that surround this thesis. Arms control is the attempt to place restrictions on storage, proliferation, and use of weapons and thus to diminish their role in international affairs and, therefore, to give states an opportunity and mechanisms to collaborate. Disarmament is the complete elimination of a certain type of weapon. War is a state of armed conflict. Peace is the freedom from war or violence. Peace and war are

inextricably linked with both being the absence of one another. It is this dichotomous relationship between war and peace and the question of how to promote peace and limit war that gives rise to arms control. With war being a state of armed conflict between actors and with state being the dominant actor, interstate cooperation matters a great deal as well. The state is an important concept given that arms control and disarmament agreements are between states and the existence of the state governs the very existence, and the effectiveness of these agreements. Proliferation is to a very much one matter that arms control and disarmament seek to limit and thus preventing proliferation- i.e. an increase in numbers and spreading in location of armaments- becomes a vital aim of arms control. How well this is achieved and what the effects of limiting proliferation are on global and regional peace are questions to be scrutinized.

Organization

This thesis will be divided into five chapters. The next chapter, Chapter two, is an overview of major concepts where I will especially define and examine these concepts: the state; war; peace; proliferation; and arms control and disarmament. I will focus on these concepts through the lens of established scholars. These concepts consist of a necessary base from which to launch an examination of the arms control and disarmament's relation to peace.

The third chapter will be on the history of arms control. I want to expose the theories and ideals that lie behind arms control and disarmament and how they are intimately interconnected with war and peace. I will also lay out an overview of arms control's general history, particularly in the post-World War II era. Arms control's and

disarmament's proponents, the obstacles faced, and those that it still faces and the some of the earlier major treaties signed will also be reviewed.

The fourth chapter will specifically look at arms control and disarmament through treaties and export control regimes and the details surrounding these agreements. In order to examine this topic two case studies will be closely examined: the Chemical Weapons Convention; a treaty acceded to by most of the world's nations, and the START treaties between the USA and the USSR/ Russia. Individual states that once possessed chemical weapons will be analyzed to ascertain why they disarmed. The few states that continue to possess chemical weapons and refuse to accede to the CWC will also be scrutinized in depth to discover why they have gone against the grain. I will also briefly review India-Pakistan nuclear relations. Via these case studies, I will analyze the effects of arms control and disarmament and seek to answer the question as to how effective they have truly been in limiting war and mitigating its consequences. This will consist of the bulk of the work.

The fifth and final chapter will recount the findings that this thesis draws and provide an answer to the overarching question of whether arms control and disarmament limit interstate aggression. The thesis's conclusion also predicts the future of arms control and disarmament and appraises how they can be improved in order to better limit the ravages of war and the means through which this might be brought into fruition.

Chapter Two: Literature Review and Concepts

There exists a plethora of material analyzing arms control and disarmament. Much of this material comes from various arms control and disarmament regimes, international or state bodies, and non-governmental organizations who are concerned with the matter. Not surprisingly most of the work is specific towards one variety of weapon and the related arms control or disarmament. One of these sorts of weapons two with substantial literature on them are chemical and nuclear weapons. The literature on the CWC, which is largely considered as a decent success even while much of the discussion on the attempted destruction of chemical weapons, and the prevention of their use, centers on the immense challenges faced. The literature on nuclear arms control is vast, particularly between the USA and Russia/Soviet Union. While New START is seen as a benefit for nuclear arms control it is almost universally accepted as a modest treaty; particularly compared to other potential options that might have been.

In regards to war and peace, in which arms control and disarmament can perform a vital role, a substantial amount has been written. It is true that there are considerably more factors than just arms control or arms races that influence this dichotomy. But that is not to say that arms control and disarmament cannot be influential, and they can even be difference-makers in certain situations. Its effectiveness remains a contentious topic in the literature. Proliferation has oft been discussed with many thinkers maintaining that arms control and disarmament regimes can restrict proliferation considerably. When anti-proliferation is backed up with enforcement by state parties it can be rather effective. As the arms control and disarmament treaties that I examine are between states and the wars

they seek to prevent or limit can be classified as either interstate or intrastate, an examination of the foundational unit of the state is necessary going forwards. It is clear that much of war, peace, arms control, disarmament, and proliferation hinges on the state.

The State

The state is the principle unit of geopolitical organization in the modern world and is defined by Gianfranco Poggi as “an organization” where political power is vested and exercised through a body of rules, a series of roles, and a body of resources.¹ States are the primary bodies through which arms control and disarmament treaties function. After all, it is negotiations between states that form these treaties and states are the ones that sign and ratify these agreements. Of course, states are composed of individuals and are not one completely unified body.² Thus who is in power within the government has an appreciable impact. Separating government and the regime in power from the more fundamental state and from citizens is beneficial to understand how the state relates to arms control. Some regimes are more, or less, likely to accede to arms control or disarmament agreements. It is important to note that the domestic aspects do affect international relations.³ But I am less interested with the domestic aspects of the state then how they interact amongst each other internationally, as arms control and disarmament are essentially one form of this interaction.

Social Contract theory is important to the conception of the modern western state, including ideas of legitimacy. The social contract helps to explain how a state can speak

¹ Poggi, Gianfranco. *The state: Its nature, development, and prospects*. Stanford University Press, 1990, 19.

² Koh, Harold Hongju. "Why do nations obey international law?." (1997): 2657.

³ Haggard, Stephan, and Beth A. Simmons. "Theories of international regimes." *International organization* 41.3 (1987): 499.

for its citizens when negotiating arms control and how internal opposition (such as factions of the United States Congress) can derail arms control treaties.⁴ A legitimate government has authority over its subjects as they have consented to be governed and come under the rule of the sovereign state in exchange for protection.⁵ The individual benefits from this arrangement as states seek to protect themselves and their citizens from other states. The rationale for the state's existence as ensuring citizen's safety, and functioning as better protective mechanism for individuals, can help to drive the arms race. At the same time the state helps act as a body to prevent arms races between individuals by instituting arms control internally.⁶ Of course, many people around the world do not consent to be governed and are kept in line through coercion and force.⁷ Fear of the government is one manner of control, but another is fear of the outside, particularly of other states.⁸ Thus international tensions, and especially war, can benefit a regime's domestic legitimacy.

Sovereignty is vital to the state and is what the modern nation-state largely derives from. The state has the right to full control and power over its own affairs, without interference from others. The common modern conception of the state is largely western, with a Westphalian conception of sovereignty. The Peace of Westphalia of 1648 is where the primacy of a state system was established. Each state was recognized to have

⁴ "Social Contract Theory" IEP-University of Tennessee at Martin. <https://www.iep.utm.edu/soc-cont/>

⁵ Kymlicka, Will. "The social contract tradition." *A companion to ethics* (1993): 190.

⁶ Whitman, James Q. "Between Self-Defense and Vengeance/between Social Contract and Monopoly of Violence." *Tulsa L. Rev.* 39 (2003): 911.

⁷ Lake, David A., and Donald Rothchild. "Containing fear: the origins and management of ethnic conflict." *International security* 21.2 (1996): 45.

⁸ Bramstedt, Ernest Kohn. *Dictatorship and political police: The technique of control by fear*. Routledge, 2013, 165.

exclusive sovereignty over its territory, and the principle of noninterference set forth by Westphalia continues to this day.⁹ Of course, this principle of noninterference has never been completely adhered to but the Westphalian system is still the dominant paradigm today. But there are challenges to this paradigm of the state in the increasingly globalizing world.¹⁰ One of these challenges is fracturing, threats of separatist movements and insurgencies.¹¹ Another is the coalescing of states such that the sovereign state becomes absorbed into broader entities.¹² The position of the state is safe for the near future at least however, and for quite a bit longer in my opinion, at least long enough to assume the state as the foundational unit from which to examine arms control and disarmament. Separatist movements seek to create their own states, with the same prime characteristics, and insurgencies often seek to topple a current regime and take control of a state, or establish a new state out of the territory of others. Attempts at expansion tend to absorb states into other states or into structures that can be deemed extremely state-like (such as a hypothetical united Europe). Either way, the idea of the state is not under as much threat as many believe even with cross-border movement intensifying and expanding.

There are more renewed threats to sovereignty, particularly since the 1990s, that concern international law and intervention in what was once considered sovereign affairs.

⁹ Hayman And, P. A., and John Williams. "Westphalian sovereignty: Rights, intervention, meaning and context." *Global society* 20.4 (2006): 521.

¹⁰ Osiander, Andreas. "Sovereignty, international relations, and the Westphalian myth." *International organization* 55.2 (2001): 252.

¹¹ Pitty, Roderic, and Shannara Smith. "The indigenous challenge to Westphalian sovereignty." *Australian Journal of Political Science* 46.1 (2011): 123.

¹² Sørensen, Georg. "Sovereignty: Change and continuity in a fundamental institution." *Political Studies* 47.3 (1999): 591.

The right of intervention if another state represented a large enough security threat has been around for a while. The argument behind this being: another state's sovereignty is only to be violated if one's own sovereignty is under threat, usually based on what is perceived as an act of aggression.¹³ However the right to humanitarian intervention entails the violation of a state's sovereignty when there is no perceived direct threat to the intervening powers. Instead, sovereignty is violated in order to achieve humanitarian objectives.¹⁴ Under this conception certain states, the great powers, possess a responsibility to protect in order to prevent genocide, war crimes, ethnic cleansing, and crimes against humanity.¹⁵ Included within war crimes and crimes against humanity are prohibitions on the use of certain weapons, consequently circling back to arms control or disarmament. Military intervention can function as a perverse sort of arms control or disarmament. A state can be disarmed via force, either in response to aggression or the threat of aggression, or to prevent the humanitarian and human rights disasters.

It is only through the support of modern states that international and supranational organizations and regimes, such as the Organization for the Prohibition of Chemical Weapons, can function. Nonetheless states often benefit from membership in supranational organizations and unions. Membership of international organizations, such as the UN, also confers legitimacy on a state, with membership concurrent on the recognition of sovereignty by other states. There is also legitimacy to be gained by following international laws and norms. This is self-enforcing in that the majority of states are unlikely to tolerate violations and also less predisposed to relations with "rogue

¹³ Krasner, S. D. (1999) *Sovereignty: Organized Hypocrisy*. Princeton, NJ: Princeton University Press, 21

¹⁴ *Ibid*, 102.

¹⁵ *Ibid*, 257.

states.” Within most supranational organizations, and treaty regimes, the belief reigns that each member state is equal and to be treated as such, at least within that organization.¹⁶ Of course looking at the funding for these organizations, or even who has voting rights (such as the permanent members of the UN Security Council), makes it clear this is only an ideal. Nonetheless, the state does gain legitimacy by joining, rather than going against, international norms and groups.

The nation state emerges as state-building and nation-building often overlap and a created sense of nationhood and a bond between strangers builds up the modern state. Ethno-nationalism is not necessary for the creation of a nation-state as there is the potential for civic nationalism, as well as national minorities that are seen as being part of the nation. Multinational and multiethnic states are common, including the USA and Russia, but both have heavy strains of nationalism and patriotism. What is common amongst all these states is that they gain legitimacy and power through unity in this bond of strangers.¹⁷

State vitality is important to keep in mind as this is directly related to state legitimacy and also to the ability for a state to accede to and enforce an arms control or disarmament agreement. The more vitality a state possesses, referring to the ability of the state to sustain a beneficial position, the easier it is for a state to accede to an arms control treaty and also to influence other states, particularly those with less vitality, to accede as well. As outlined by JDB Miller sovereignty plays a role as a source of vitality for the

¹⁶16 Franck, Thomas M. "Legitimacy in the international system." *American Journal of International Law* 82.4 (1988): 705-759.

¹⁷17 Yack, Bernard. "Popular sovereignty and nationalism." *Political theory* 29.4 (2001): 534.

state.¹⁸ The more active sovereignty a state has in practice over its territory the greater its ability to enforce matters and the greater its legitimacy. A strong state is necessary for arms control or disarmament.

Throughout their existence states have always interacted with each other and diplomatic relations between states are major parts of the international landscape. This is after all what arms control and disarmament agreements are based off. It is because of this that I approach arms control and disarmament and their effects on conflict through a state-level analysis. Realist international relations theory holds the state to be the primary actor internationally. This is much the same with liberal theory. Both schools of thought also accept an anarchical world system.¹⁹ That independent sovereign states have no central authority above them can be taken as a given. Thus states must make agreements with each other in order to bring about arms control or disarmament. The realist struggle for power, heavily focused on the military aspects can explain security dilemma and security existing as a zero-sum game. Attempts at hegemony or preserving the balance of power are important state motivations that lead necessarily to increased tension and a spirit of insecurity as vigilance and constant preparation for conflict are part of a state's existence. Under this conception wars occur because there is nothing to prevent them.²⁰ The Soviet/ Russia and United States relations follow the realist conceptions more closely in my understanding. Liberalist views are a bit more optimistic in that the

¹⁸ Miller, John Donald Bruce. "Sovereignty as a source of vitality for the state." *Review of international studies* 12.2 (1986): 82.

¹⁹ Grieco, Joseph M. "Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism." *International organization* 42.3 (1988): 490.

²⁰ Waltz, Kenneth (1954). *Man, the State, and War: A Theoretical Analysis*. New York, NY: Columbia University Press.; Poggi. *The State*. 111.

interdependence of states works to prevent war and common institutions, such as democratic ones, can prevent conflict and tension. Under liberalism there is hope for global disarmament with a more interdependent world and common ideas between states. There are other schools of thought that dispute even the anarchical world system and explaining how states interact with each other is a complex task. Why arms control is needed, how state go about pursuing it, and how this impacts the relations between states is relatively easier task.

One aspect of the state is the monopolization of violence. As Max Weber asserts the state “lays claim to the monopoly on the legitimated use of physical force.”²¹ Any right to use force, even by the individual in self-defense comes from the state. This exclusive right to force emerges from the legitimization of the state.²² This monopolization of force coupled with the greater ability of the state to develop, produce, stockpile, and use armaments has led to a greater imperative for arms control but also means that the arms control can be achieved through negotiations between states, and states alone. Weaker states are also less secure states and more vulnerable to disruptive conflict. Weak, often post-colonial, states lack vitality and their illegitimate governance structure breeds resistance which is strengthened when the ineffectual governments seek to strengthen the state, leading to internal conflict, which can spread externally.²³

War

²¹ Weber, Max. "Politics as a Vocation." 1919, 1.

²² Ibid, 3

²³ Holsti, Kalevi Jaakko. *The state, war, and the state of war*. No. 51. Cambridge University Press, 1996.

War is an acute act of violence, a state of armed conflict, a period of hostility between organized parties. It has been with civilization throughout. War may not require the state, but the state always has to deal with war even if rather indirectly only in preparation.²⁴ War is central to the state's very nature and political changes are influenced very much so by military ones and vice versa.²⁵ Clausewitz in his book *On War* says that "War is not merely a political act, but also a real political instrument, a continuation of political commerce, a carrying out of the same by other means." Indeed much of the organization of the state centers on war. For Kant "every nation must be so organized internally that not the head of the nation-for whom, properly speaking, war has no cost... but rather the people who pay for it have the decisive voice as to whether or not there should be war."²⁶ The decision to go to war is not one to be taken lightly, and wars consume a great deal of a state's resources, potentially having a deep impact on the Homefront and the very idea of a nation.

The development of war in theory, and particularly in practice, makes arms control more of necessity as the armaments, and tactics that accompany them, become more and more destructive. The ideas of total war that emerged in the modern era with the French revolutionary wars and the Napoleonic Wars with the nation at arms and the pouring of an entire nation into the war effort. The increased destructiveness of war and the blurring of lines between combatants and non-combatants meant that war was more impactful than ever and this fact underscores arms control's necessity. Total war is

²⁴ Katzenstein, P., ed. (1996) *The Culture of National Security: Norms and Identity in World Politics*. New York: Cambridge University Press, 14.

²⁵ Poggi, *The development of the modern state: A sociological introduction*. 111.

²⁶ Kant, Immanuel. *Perpetual peace and other essays*. Hackett Publishing, 1983.

unrestricted in the sorts of weapons used, although this does not necessarily mean that all weapons will be flung into the fray. Nonetheless the existence of weapons of mass destruction means that war now has the possibility to lead to a catastrophic apocalyptic scenario with the destruction of whole nations and even the possibility of the extinction of humanity through our own hands.

The insights of Clausewitz are highly useful in understanding the nature or warfare. Clausewitz's relevance beyond the 19th century is shown by an "endless adaption of Clausewitz to new situations" including nuclear warfare and the War of Terror.²⁷ War being the continuation of *politik*, a blend of politics and policy, is one of Clausewitz's more famous ideas. War is always fought for a political objective, as a means of reaching said objective and more an instrument to do so than a simple continuation of policy.²⁸ This subordination of military point of view to the political is not only present but desirable. Acts of terrorism are as much driven by policy, and the motives indeed do not need to be wholly political, as state-directed invasions.²⁹ Clausewitz's abstraction of absolute war and limited war are not present in the real world (nor are they presented as such) but they function well as two ends of a scale with which war varies. Knowing what war one is fighting is extremely important today if one wishes to achieve victory. Absolute war, once purely abstraction, has become a greater possibility with the threat of nuclear exchanges. Indeed the adaptation of Clausewitz's

²⁷ Buzan, Barry, and Lene Hansen. *The evolution of international security studies*. Cambridge University Press, 2009. 232.

²⁸ Clausewitz. "Concepts" in *War* edited by Freedman, Lawrence. Oxford University Press, 1994.

²⁹ Echevarria, Antulio J. "Clausewitz and the Nature of the War on Terror." in *Clausewitz in the Twenty-first Century* (2007): 213.

point for nuclear strategy partially reveals not only the adaptability of Clausewitz but also the timeless nature of many of his thoughts on war.

Clausewitz's idea of friction differentiates real war from war in theory. This friction encapsulates that war relies heavily on chance and is composed of many moving parts. Thus the probability for something to deviate from theory is high.³⁰ Friction is what makes war unpredictable. A great leader can cope with friction through instinct coupled with experience and good grounding in theory. Still Clausewitz compares it to steering a ship (a Napoleonic-era vessel probably) past reefs in uncharted seas in the dark a task that it at best extraordinarily difficult and that even the best instinct is unsure of completing safely.³¹ This is true of war today, as it was back in Clausewitz's day, and it is true for the foreseeable future. Even if it easier to navigate conflict due to technological advances friction is still present and is one of the Clausewitz's key insights regarding war. The uncertainty of war means that even if certain weapons are not utilized at first there is no guarantee that this will continue. Thus arms control seeks to preemptively prevent the use of weapons via peacetime restrictions.

Clausewitz's trinity is extremely relevant and strikes at the nature of war. The wondrous trinity of violence, purpose, and effort are useful to understand the nature of war and to wage war whether in the past, present, and future. Balancing this trinity is important in theory and in practice. Clausewitz recognizes that war is fraught with danger and peril (an insight that anyone would see) and that violence and danger and their effects on those experiencing war are vital parts of friction and understanding this and the

³⁰ Clausewitz. "Concepts" in *War* edited by Freedman, Lawrence. Oxford University Press, 1994, 208.

³¹ Kane, Tom. *Strategy: Key Thinkers*. Polity, 2013, 91.

emotions in war, including an enthusiasm for killing, is vital to navigate warfare.³² According to Echevarria, this part of the trinity, hostility, is particularly present in the War on Terror with it particularly factoring into a war of wills with US policy indeed being partially an attempt to undermine the hostility and willingness to fight driving many of terrorist organizations.³³ Policy functions as a guiding force for war that governs the efforts of the military and restrains the passions of violence.³⁴

Clausewitz's ideas on what he deems the "center of gravity" (*Schwerpunkt*) are just as important now. Armies, capital, and people are, as they were back in the 1800s, potential "centers of gravity" that a state's energies ought to be directed at during open hostilities.³⁵ During the USA invasion of Iraq, Baghdad and the Iraqi army functioned as centers of gravity and the USA concentrated its forces on these targets defeating the Iraqi army and capturing Baghdad with relative ease, thus concluding the USA invasion as a success. Of course the Iraq War quickly shifted as an insurgency emerged and the "center of gravity" became the Iraqi people. There are always nucleuses of extreme importance in war, though what they are changes. The populace is often a "center of gravity" with people, including non-combatants functioning as targets. This does not mean that the populace is necessarily targeted to be killed. Rather one may attempt to bring a particular constituencies over to one's side; the winning of hearts and minds. This can be done via the creation of social and political ties as Hezbollah has managed to do, and as the US

³² Ibid, 92-93.

³³ Echevarria, Antulio J. "Clausewitz and the Nature of the War on Terror." in Clausewitz in the Twenty-first Century (2007): 215, 216.

³⁴ Gat, Azar. A history of military thought: from the Enlightenment to the Cold War. Oxford University Press, USA, 2001, 250.

³⁵ Clausewitz. "Concepts" in War edited by Freedman, Lawrence. Oxford University Press, 1994, 211.

and Afghan National Government are attempting to do in Afghanistan.³⁶ Other, more destructive, methods to address the populace being the “center of gravity” include: the Allied attempt to destroy the enemy’s will and industrial capacity via de-housing the German workers during World War II, and counter-value nuclear strikes where entire cities are targets.

In order to wage war armaments are necessary. There have been major technological advances in warfare and modern militaries are capable of more destruction than ever before. The modern state has the prerequisite of a large and powerful military force.³⁷ For great powers this can include WMDs. Whether there are WMD’s or not large military arsenals threaten the potential for war, and increasingly devastating war, which is what arms control seeks to prevent.

The existence of “total war” means of course that war can be limited and its worst excesses can be contained. Thus arms control seeks to prevent conflict but also to limit it and mitigate the consequences if it does occur. The strategy and tactics used are a key part in the possibility of devastation in a war. The other key part is the weapons used. Both have been the subject of attempts to limit their worst excesses through rules of war and conventions (such as the famous Geneva conventions). Arms control particularly tackles this through limiting the weapons used or threatened to be used.

Peace

³⁶ Echevarria, Antulio J. "Clausewitz and the Nature of the War on Terror." in *Clausewitz in the Twenty-first Century* (2007): 215, 214.

³⁷ Poggi, Gianfranco, *The State*. 113.

War and peace are two terms in opposition. The Oxford English Dictionary defines war as “a state of armed conflict between different countries or different groups within a country” whilst a definition of peace (from the Oxford English Dictionary) is “a state or period in which there is no war or a war has ended.” Since peace is the absence of war it is worth examining it in depth and what role arms control has to play in this. But there are also certain peculiarities specific to peace that is more than just the absence of conflict as peace can be tension-filled and could lead to large-scale hostilities.

A distinction can and ought to be made between negative and positive peace. These ideas emerged earlier, but were famously articulated by Galtung. Negative peace is the absence of violence, the inverse of war, where there is no active conflict. This has been the standard definition of peace for most of history but this peace allows for tension and arms races, as well as human rights abuses. Positive peace on the other hand goes beyond the mere absence of war and includes peace with justice, cooperation, and lack of tensions though unlike negative peace what defines positive peace is not consistently agreed upon. Galtung defined positive peace as “the integration of human society” that combats the deeper long-term structural aspects that cause conflict.³⁸ The need for arms control largely arises from the uneasy, tension filled, negative peace, and seeks to reduce the level of tension, tackling negative peace without trying to eliminate it (a futile task for just arms control anyhow). However there are broader hopes for positive peace with disarmament, which seeks to divest states of certain armaments and, as a result, relieve potential points of tension and obstacles to peace.

³⁸ Galtung, Johan. *Peace by peaceful means: Peace and conflict, development and civilization*. Vol. 14. Sage, 1996.

Kant's idea of perpetual peace, permanent peace over the globe, is based on a foundation of similar republican states and "federation of free states all around the world."³⁹ This furnishes Kant's ideas that ideally it is the citizens of the state who should decide whether that state will go to war. For the citizens of the state naturally will consider all calamities and costs they may have to bear before committing themselves to hostilities. There is also the theory that citizens, as in opposition to regimes, do not want to fight each other and governments responsible to their citizens will be less likely to go to war. Republican and Democratic governments are often thought to be more inclined to peace. The democratic peace theory holds that democracies do not go to war with each other due to common domestic institutions constraining the recourse to war. This may well link correlation with causation and the democratic nature of states may not explain present peace between democracies, with other factors such as American dominance over democratic states, potentially playing a role.⁴⁰

Deterrence can create conditions for peace, though a negative peace that is tension filled. Under deterrence, states with a deterrent do not go to war with each other due to the destruction that would occur. Deterrence, therefore, prevents war even if political factors are conducive to it. The deterrent is by nature potential military force, and as such includes armaments as well as the willingness to use them in retaliation. This deterrent can be conventional arms; the American conventional bomber fleet can flatten countries, but is more typically applied to nuclear weapons, though it also functions well for other weapons of mass destruction. There are two parts to successful deterrence: the military

³⁹ Kant, Immanuel. *Perpetual peace and other essays*. Hackett Publishing, 1983.115.

⁴⁰ Rosato, Sebastian. "The flawed logic of democratic peace theory." *American political science review* 97.4 (2003): 585-602.

capability, which arms control can address directly; and the bargaining behavior (including brinkmanship) that enhances credibility that the state is willing to use its military might.⁴¹ A strategy of deterrence does increase tension and, if not addressed, will lead to an arms race. Deterrence does also not necessarily benefit global peace.

The stability-instability paradox exists when direct large-scale warfare is avoided amongst adversaries due to deterrence, thus producing stability in this arena. However the adversarial states still jockey for advantage and involve themselves in surrogates for direct conflict as a result of the tensions that cannot be released in direct hostilities, leading to instability elsewhere.⁴² This paradox specifically relates to nuclear weapons and demonstrates the flaws of negative peace. Direct large scale war is avoided but blood and treasure are still expended as there is an escalation in conflict in the periphery. Nuclear deterrence induces caution and prevents war such as during the Cold War between the United States and the Soviet Union, but drives completion into safer pursuits and increase limited war.⁴³ Therefore deterrence actually increases violence at lower levels. This is because smaller ventures, such as proxy wars or border skirmishes, can be undertaken with impunity as the risk that these lower level conflicts spiral into a large scale war is severely decreased (due to the effectiveness of deterrence). In the case of India and Pakistan, small level skirmishes in Kashmir and support for indigenous insurgencies is aided by nuclear deterrence. These small conflicts are seen as controllable and calculable and the likelihood of them spinning into full-scale nuclear war is relatively

⁴¹ Huth, Paul K. "Extended deterrence and the outbreak of war." *American Political Science Review* 82.2 (1988): 423-443.

⁴² Krepon, The stability-instability paradox, misperception, and escalation control in south Asia.

⁴³ Krepon, The stability-instability paradox, misperception, and escalation control in south Asia.

miniscule given the devastating consequences of such a conflict.⁴⁴ In fact, the stability-instability paradox is most commonly used to refer to the Cold War and the many proxy wars that took place then, and the tension-filled relations between India Pakistan.

Particularly this is proposed to hurt tensions as Pakistan is weaker than India conventionally, but it's nuclear capabilities make the results of a war more uncertain and deadly and allow Pakistan to act more aggressively, thus hurting the chances for peace and while preventing full-scale war, breeding more low-level conflict that is nonetheless devastating to many people.⁴⁵ Even in 1954, B.H. Liddell Hart stated that "To the extent that the H-bomb reduces the likelihood of full-scale war, it increases the possibility of limited war pursued by widespread local aggression."⁴⁶ The realization of mutual assured destruction, provided by submarine launched missiles, Inter-continental Ballistic Missiles and Hydrogen Bombs, led many to a similar conclusion. Glenn Snyder in the 1960s (in his 1961 book *Deterrence and Defense*, and an chapter of the 1965 book *Balance of Power*, where he espoused this stability-instability paradox but added that the opposite could be argued as well.

Proliferation

Proliferation is the spread of weapons and the increase in the number of states that possess them. Proliferation could occur for all types of weapons and in many cases is part of international trade, with many nations purchasing weapons from the great powers. In

⁴⁴ Ganguly, Sumit. "Indo-Pakistani Nuclear issues and the stability/instability paradox." *Studies in Conflict & Terrorism* 18.4 (1995): 325-334.

⁴⁵ Kapur, S. Paul. "India and Pakistan's Unstable Peace: Why Nuclear South Asia Is Not Like Cold War Europe." *International Security* 30.2 (2005): 127-152.

⁴⁶ Hart, BH Liddell. "Strategy, rev. ed." *New York: Frederick A. Praeger* (1954): 159.

other cases, states could develop their own weapons and for WMDS this has been the modus operandi of proliferation. Counter-proliferation consists of attempts to thwart proliferation by preventing the acquisition of weapons via intelligence, law-enforcement, and military efforts. Such efforts include impeding the export of certain materials necessary to build nuclear weapons is. Non-proliferation efforts include diplomatic treaties to prevent the spread of weapons. The Treaty on the Non-Proliferation of Nuclear Weapons is one good example. Prevention of proliferation is oftentimes diplomatic, with economic sanctions being a tool to dissuade states, but military action can and has been taken. The Israeli airstrikes on Syrian and Iraqi nuclear facilities are cases of non-diplomatic measure to prevent proliferation.

Proliferation occurs for varying reasons, but security is usually the primary concern when a state that has the capability chooses to adopt, or to not adopt, a weapons technology, though legitimacy is also important, particularly with WMDS.

Scott Sagan aids the examination of proliferation of nuclear weapons by examining why states choose to build nuclear weapons.⁴⁷ He challenges the then conventional wisdom that nuclear proliferation only occurs when a state faces a significant military threat that cannot be met otherwise. Thus they require a powerful deterrent to maintain their security. The realist security model means that the development of a nuclear arsenal creates a threat and power imbalance that rival states seek to correct by developing their own nuclear weapons. The Domestic Model focuses on the internal actors and the political and bureaucratic interest of certain actors. As

⁴⁷ Sagan, Scott D. "Why do states build nuclear weapons? Three models in search of a bomb." (1996).

relates to arms control, an international regime can pressure domestic interests but domestic interests have an extensive amount of control. The Norms Model emphasizes nuclear symbolism where a nuclear arsenal adds legitimacy to the state. Indeed legitimacy may be a key issue for any weaponry which a state possesses and which might come under potential arms control.

Given that states are the ones who decide to develop and produce these weapons in the first place, it is useful to examine why states adapt weapons of mass destruction. Some of the reasoning that Sagan puts forth can also be applied to other weapons, particularly weapons of mass destruction, though to a lesser extent for weapons like landmines, and cluster munitions. Security concerns are an obvious motivation for WMD development. Seeking to remove military disadvantages that often translate into geopolitical ones is what drives the security dilemma. The pursuit of nuclear weapons by all the current nuclear powers was at least partially driven by anxieties surrounding security and supposed vulnerabilities. Production of nuclear weapons was largely in response to adversaries; where a state sought to develop nuclear weapons to counter against a rival state: the USSR to counter the USA, the UK and France to counter the USSR (intensified by uncertainty over just how far the USA would go to protect Europe), India to counter China, and Pakistan to counter India. This was also the case with European development of chemical weapons prior to, and during, the First World War. However, there is a danger in trying to find the security threat that caused a state to pursue weapons and alternative reasons must also be examined. Legitimacy obtained by possession of nuclear weapons in particular, is something that many states seek. Nuclear

weapons do help to ensure a state's and regime's survival, but by ascending to a nuclear club a state can also hope to gain other benefits and respect that great powers possess. Legitimacy may also be sought domestically, as nuclear weapons can be showcased internally as symbol of a state's weighty status in the international community and military prowess and, thus appealing to nationalist and militaristic sentiment. Bureaucratic and industrial actors may also be part of the cause as Sagan examines.⁴⁸ Morton Halperin advocates this viewpoint, where bureaucratic actors encourage an extreme perception of threats and lobby for increased defense spending and development, oftentimes benefitting themselves and creating the conditions for nuclear development, along with a whole host of other developments, including chemical and biological weapons.⁴⁹ In India, for example, there was substantial internal debate whether India should develop nuclear weapons or pledge itself to nuclear disarmament. Here domestic politics definitely played a role as the ruling Indian National Congress was increasingly unpopular and nuclear testing was thought to be potentially beneficial to the ruling party popularity. This turned out to be true. Ninety percent of Indians surveyed in a June 1974 poll were proud of the achievement of obtaining nuclear weapons and India's standing in the world was increased amongst the international community as well. This heightened standing in the international community, or at least the perceived increase seen by the Indian government and populace, was largely due to norms where nuclear weapons were possessed only by the most powerful and modern states. The nuclear club is exclusive, partly due to the costs involved in developing and maintaining a nuclear arsenal, but also

⁴⁸ Sagan, Scott D. "Why do states build nuclear weapons? Three models in search of a bomb." (1996).

⁴⁹ Halperin, Morton H., and Priscilla Clapp. *Bureaucratic politics and foreign policy*. Brookings Institution Press, 2007. 135.

owing to the nuclear proliferation regime that seeks to limit nuclear weapons. In another example, France developed nuclear weapons not only to counter the Soviet Union, but more so to gain the symbolic political significance that comes along with nuclear weapon possession, at a time when France was trying to reassert its status as a great power that it had enjoyed before World War II.

Arms Control and Disarmament

In simple terms arms control is the limitation of arms through methods such as the reduction of the number of weapons, the types of weapons or delivery systems, the research and manufacture of certain weapons, or the levels or locales of deployments of these weapons⁵⁰. Arms control can be unilateral but it is usually an agreement between multiple parties. All the treaties regarding nuclear arsenals are strictly arms control, seeking only limitations in stockpile numbers or technologies. Harald Muller postulates that for arms control regimes to be successful three conditions must be fulfilled: Treaty community coherence, leadership, and great power cooperation.⁵¹ Arms control can be divided into several types as laid out by Roach, Griffiths, and O'Callaghan.⁵² There are horizontal restrictions which deal with non-proliferation and preventing the spread of weapons. These include geographic restrictions that limit the placement of certain weapons, numerical restrictions, which involve caps on the quantity of certain weapons, technological restrictions, covering the limiting or banning of certain technologies,

⁵⁰ "Arms control, disarmament and non-proliferation in NATO" NATO.
http://www.nato.int/cps/en/natohq/topics_48895.html

⁵¹ Müller, Harald. "Compliance politics: A critical analysis of multilateral arms control treaty enforcement." *The Nonproliferation Review* 7.2 (2000): 79.

⁵² Roach, Steven C., Martin Griffiths, and Terry O'Callaghan. *International relations: the key concepts*. Routledge, 2014.

particularly those that threaten the balance of power, and confidence building measures, which include sharing knowledge and establishing communication measures and, importantly compliance and verification. Oftentimes, arms control agreements are combinations of these with verification being important to successful agreements.

Disarmament refers to the complete elimination of certain armaments. This is what the Chemical Weapons Convention and the Treaty on the Prohibition of Nuclear Weapons (Nuclear Weapons Ban Treaty) seeks to do. Disarmament can be unilateral or multilateral (or bilateral). For the CWC it is multilateral but the USA unilaterally decided to proceed with disarmament of its chemical weapons stockpile under George H. Bush (although it is not expected to complete this until 2023). Nuclear disarmament appears at this present time as a distant horizon to reach and though proliferation may be prevented and stockpiles reduced, the nuclear threat is surely something that humankind will be living with for quite some time.

The CWC aims for eventual disarmament. Some also seek similar disarmament of nuclear weapons as well as of other weapons of mass destructions and other armaments that cause inordinate damage to civilians such as landmines and cluster munitions. Of course actually achieving disarmament faces obstacles. The process of disarmament can include reductions in weaponry not just complete destruction, but complete reductions must be the goal. Disarmament can be considered an extension of arms control though the terms are not synonymous even if they are related. Sometimes the terms are used somewhat interchangeably colloquially. But there is a clear scholarly distinction and in this thesis I differentiate between the two though by no means are the definitions I

present necessarily universal and they are very much centered on weapons of mass destruction.

Arms control and disarmament are obviously very closely related to war and peace. It is commonly supposed that both are beneficial and help to prevent war and mitigate its effects. But in order to inhibit war arms control must be successful. Exactly what this success entails is open to interpretation and specific to the surrounding circumstances. However one clear conception entails when an arms control agreement is being adhered to by the acceded parties. More widely, it may depend on how many nation-states are acceding to the agreement, which is going to be quite different for landmines compared to nuclear weapons (with nuclear weapons agreements just between the USA and Russia are necessary for serious reductions in numbers). The same criteria can be used for disarmament with a particular emphasis on the global dimension. Arms control seeks to deter challenges to peace by establishing a world order that does so through limiting certain armaments, or in the case of disarmament, eliminating them completely. It is important to note that neither arms control nor disarmament can present any claim to prevent war completely; rather they seek to prevent and limit war under certain circumstances, by controlling armaments. But war will be fought anyway, the causes being primarily political, and arms control and disarmament seek to prevent certain wars from breaking out and certain weapons, usually those with major indiscriminate destructive power, from being utilized.

Though arms control can be implemented through force, diplomacy is the most common method through which it is achieved. Either way, the state is heavily involved

and indeed political power is especially important when it comes to weapons of mass destruction, and doubly so with nuclear weapons as they change calculations of warfare by providing for mutual assured destruction.

The security dilemma is the problem that arms control is supposed to aid in solving. This dilemma is a situation where a state increases its military power, such as through developing and stockpiling certain weapons, with the intention of increasing its security, based on the simple premise that militarily and politically stronger states are more secure. This leads other states to respond in turn, by stockpiling more of a certain weapons for instance, and increasing tensions as this pattern continues. The dilemma arises as the tensions and risk of conflict threaten the states security even while the state seeks to increase its security by increasing military power to gain at least a minimum level of deterrence. With the advent of new weapons, particularly weapons of mass destruction, the dilemma becomes increasingly worrisome due to attempts to achieve an advantage over opponents, often before rules of use and competition are put in place and clarified, driving arms races into overdrive. This may be seen partially in the early years of the Cold War with major tensions and risk of war over Berlin and Cuba, and the arms race driven by fear of disadvantage such as the “bomber gap.” The Cold War experience also showcases the potential for mutual assured destruction to prevent the security dilemma from spiraling into war. However, there are several problems that arise, particularly the stability-instability paradox and the increased violence in the periphery.

The security dilemma is largely seen as going along with realist international theory and makes sense in an anarchic system.⁵³

A common criticism is that arms control does not work and does not successfully deal with the security dilemma. Perhaps if arms control was universal, rigorous, and adhered to by all the states of the world, it might. However, imperfect arms control does little to nothing to benefit the world. This criticism is not so with the theory and ideals behind arms control so much as with its implementation, which is flawed and according to some cannot help but be so. There, then, arises the question of whether this implementation can be fixed and if so how to go about doing so. A major issue with implementation is verification. For, arms control functions as only a cloak with no real depth behind it, with countries, particularly the major powers, holding banned weapons in secret and attempting to gain an unfair advantage.

For some scholars, such as Richard Betts, arms control is detrimental and in fact undermines military stability.⁵⁴ He argues that equalizing military power through arms control may yield “unequal forces when alignments congeal.” The issue with arms control is not that it doesn’t work but that it is detrimental when it does work. Arms control, and particularly disarmament, diminishes deterrence. Disarmament eliminates certain arms and thus eliminates the deterrent consisting of that weapon. This is not much of a problem with chemical weapons, but with nuclear weapons it may be a real concern

⁵³Lebovic, James. “The Security Dilemma in Nuclear Arms Control: Lessons from the Truman and Eisenhower Administrations.” George Washington University. <http://www.posse.gatech.edu/sites/default/files/pubfiles/The%20Security%20Dilemma%20in%20Nuclear%20Arms%20Control%20-%20Lessons%20from%20the%20Truman%20and%20Eisenhower%20Administrations.pdf>

⁵⁴ Betts, Richard K. "Systems for peace or causes of war? Collective security, arms control, and the new Europe." *International Security* 17.1 (1992): 7.

given the potential importance of the nuclear deterrent in preventing World War III. Even with just arms control an equal balance and state of deterrence may be threatened, leading to increased chances of war as certain powers and alignments gain a clear advantage encouraging aggression, or even as deterrence weakens to become not enough of a deterrent to prevent conflict.

Arms control offers an avenue to perpetual peace and disarmament does so to an even greater extent. Walter Clemens argues that this is only part of the drive to peace as even if “total disarmament could be achieved men would still be likely to fight one another.”⁵⁵ This is also a losing battle in many ways, with arms control seemingly feeling further and further behind. However Clemens does believe that without arms control the world would be in far worse state and is in fact necessary for peace, though not sufficient. At its best it only succeeds in “outfoxing the adversary for the time being” but is important in the idealist project to bring about perpetual peace.

⁵⁵ Clemens, Walter C. "Arms control as a way to peace." *World Affairs* 135.3 (1972): 197-219.

Chapter Three: History and Theory of Arms Control

A Brief History

The history of arms control goes back a considerable length of time. Organized arms control regimes that we might recognize appear to arise during the medieval era. The Roman Catholic Church spearheaded some of these early attempts as a supranational entity. This sort of arms control applied to multiple “proto-states” and also to all individuals under the authority of the Catholic Church. The Second Lateran Council of 1139 attempted to ban the use of crossbows amongst Christians. It was a clear failure. Later on there were attempts to ban expanding bullets and there was a clear distinction between what weapons could be used against civilized powers, where arms control agreements were made, and against the “uncivilized,” which had virtually no restrictions. Some scholars believe that remnants of the earlier attitudes remain and there are certainly differing standards in practice between NATO countries and those in central Africa for instance. Modern arms control relies heavily on the state which did not emerge until quite a bit later. Arms control also became a matter of greater concern with the increased effectiveness of weaponry and the corresponding increase in the devastation of war.

The Hague Declaration to World War II.

The Hague Declaration of 1899 prohibited the use of projectiles whose sole purpose is to spread poisonous gases. This was confirmed in The Hague Convention of 1907, which banned the use of poison in warfare, only to be heavily violated during World War I. The 1899 declaration and the 1907 convention has had no real effect in

limiting chemical warfare through the inter-war years and into World War II and beyond.⁵⁶ The Geneva Protocol of 1925 again outlawed poison gas and made the prohibition more specific and extensive. It is interesting to note that there were also prohibitions in these agreements against dropping bombs from balloons which were completely ignored. This was demonstrated by the German zeppelin raids on Britain during WWI, and today dropping bombs from flying vehicles (mostly bombers) is well accepted, and sometimes even considered part of humanitarian missions. The Hague conventions and Geneva protocol were never officially scrapped but they were ignored and became de-facto dead. New agreements arose later on that drew inspiration from earlier conventions and protocols. But the more contemporary agreements, such as the Chemical Weapons Convention, were created mostly from scratch. Though the CWC is more effective than the earlier attempts at chemical weapons disarmament, the de-legitimization of chemical weapons and the start of modern arms control and disarmament movements against new destructive weapons begins with the early Hague and Geneva agreements.

The Cold War.

World War II, the most devastating war in history and was crucial for the development of Weapons of Mass Destruction. Chemical weapons were used sparingly in combat but due to the buildup towards the war and the technological drive of the war, chemical and biological weapons were far more dangerous than ever before. However it was the advent of nuclear weapons that ushered the world into a new era of arms control.

⁵⁶ Vagts, Detlev F. "The Hague Conventions and Arms Control." *American Journal of International Law* 94.1 (2000): 32.

The emergence of the United Nations that was technically committed to preventing war and aggression meant the attitude ought to have been more favorable towards arms control. The nuclear triad, second strike capabilities, the immense nuclear stockpiles of the United States and the Soviet Union, and the increasing proliferation of nuclear weapons leading to intensifying potential for nuclear Armageddon, led to a sense of urgency for nuclear weapons arms control. What this was particularly concerned with was the number of nuclear weapons a state possessed, the quantity of the stockpile which is similar to all other arms control regimes, delivery mechanisms, which START deals with alongside quantity, and nuclear testing, which ramps up tensions and functions as a show of force and willingness to utilize these weapons.

Post-Cold War.

The fall of the Soviet Union led to a dramatic lifting of tensions and lessened the chance for World War III while smaller scale wars continued. Arms control remains as important as ever. Nuclear standoff between the USA and Russia still exists to this day and tensions are increasing. Chemical weapons are back in the spotlight due to the Syrian Civil War. Nonetheless in many ways the post-cold-war era can be considered a golden age for arms control and disarmament with many utopian ideals gaining increasing currency and certain regimes, such as the CWC and Comprehensive Nuclear Test Ban Treaty, offering the chance to advance arms control and peace further than ever before. Yet many of the same obstacles from earlier days remained and arms control still has many cracks in it. It may be that deterrence and force are keeping countries in line, rather than arms control regimes.

B. Theory behind Arms Control.

Arms control is supposed to work to prevent war but when WMDs are involved deterrence arises as another effective method to prevent their use. It would appear that fear of retaliation does a decent job of keeping the use of WMDs in check. Chemical weapons in combat were notoriously absent from World War II. In truth, this is somewhat inaccurate, although examining when they were and were not used can inform ideas on what prevents their use. Treaties can be discarded as having no effect during the most devastating war in history. Morality certainly played a role, but considering the brutal and inhumane nature of World War II, this is not a convincing argument to fully explain non-use. Winston Churchill railed against hesitation to utilize chemical weapons, saying "it is absurd to consider morality on this topic when everybody used it in the last war without a word of complaint..."⁵⁷ The Japanese utilized chemical warfare against the Chinese but did not use them against Western forces for fear of retaliation.⁵⁸ Indeed before it even entered the war the United States did give warning that there would be consequences if Japan continued to use gas in China.⁵⁹ Nazi Germany had an extensive chemical industry and chemical weapons stockpile and the Holocaust is history's deadliest use of chemical weapons. Nazi Germany did in fact use gas on the Crimea peninsula to clear out Soviet soldiers and resistance fighters from caverns and catacombs. It should be noted that the Allies had substantial stockpiles that were never used.

⁵⁷ Legro, Jeffrey. *Cooperation Under Fire: Anglo-German Restraint During World War II*. Cornell University Press, 1995. 157.

⁵⁸ Tanaka, 1988

⁵⁹ Vagts, Detlev F. "The Hague Conventions and Arms Control." *American Journal of International Law* 94.1 (2000): 34.

The reasons that gas during the Second World War was not used to the extent of World War I has several explanations. Much of the reluctance stems from the extensive use of chemical warfare in World War I. Akin to the Japanese both the Allies and Germany feared retaliation and maintained a no first-use policy even as stockpiles were readied for the possibility of a first-strike from the enemy. Other considerations helped to make sure that there was no first use by either side (with a few mentioned exceptions) but the fear of introducing a weapon of terror to the war was an important part. Infamously, Hitler was gassed during World War I and this has been supposed to have aided his reluctance to allow the use of chemical weapons. It is debatable how influential this was but the extensive use of chemical weapons during World War I left a scar on European populations and made all sides cautious of their use. More tactical considerations also meant that this use never occurred. Chemical weapons' effectiveness is debatable. On one hand, they accounted for relatively few deaths (less than 1%) and even fewer victories during World War I.⁶⁰ Their effectiveness is further decreased against well-trained and well-equipped armies, and when war is mobile compared to the trench warfare of the First World War. Nonetheless they are considered horrible weapons with great psychological impact, and can be effective to stall offensives or clear defensive positions. Allied military commanders (unlike Churchill) were concerned about the optics of using chemical weapons and were of the opinion that use in mainland Europe would not be tactically beneficial, with nerve gas in Normandy potentially doing more to stall the Allied invasion than aid it. The Germans had worries about Allied retaliation including concerns that the Allies had larger stockpiles than them and would use them on German

⁶⁰ Evison, Demetrius, David Hinsley, and Paul Rice. "Chemical weapons." *Bmj* 324.7333 (2002): 332-335.

cities. In fact chemical weapons were removed from front-lines in Italy and Russia as German forces retreated out of fear that some commanders would use them to slow or halt the Allied advance (a task for which they would probably have been momentarily effective) and thus initiate far worse retaliation. In many cases the Germans also lacked the technical ability to properly deliver chemical weapons.⁶¹

What can be understood from World War II in relation to chemical weapons is that both the Allies and the Axis were not overly concerned with any treaties or agreements. Rather they abstained from using chemical weapons because they either lacked the capability (China for instance which had no chemical weapons and could not retaliate against the Japanese), feared the moral opinion of civilian populations, or feared retaliation from the other side. However international norms do have role to play, as the concerns regarding global and domestic opinions did play a role in keeping chemical weapons use in check even if security concerns were a bigger concern in total war. The non-use of chemical weapons in World War II obviously did not prevent the war but may have lessened the destruction that occurred. Though considering this was an extremely destructive conflict anyhow, it may be something of a moot point.

Mutual assured destruction seemed to prevent the Cold War from turning hot. In fact many Cold War technologies such as the Soviet Union's Perimeter system, which was supposed to automatically trigger the launch of Soviet ICBM's if a nuclear strike was detected using seismic, light, and radiation sensors, were primarily designed to keep mutually assured destruction assured through guaranteed retaliation. Deterrence can play

⁶¹ Legro, Jeffrey. *Cooperation Under Fire: Anglo-German Restraint During World War II*. Cornell University Press, 1995. 158.

an important part in preventing war and the use of weapons. However this works better with nuclear weapons than chemical weapons (or any other sort of weapon) if history is any indication and there is still the risk of devastating war. It is important to acknowledge the uniqueness of nuclear weapons where one bomb, or nuclear tipped missile, is enough to level an entire city and leave deadly radiation in its wake. Nothing else approaches this level of devastation. Combined with current delivery systems this means that nowadays, nuclear weapons, and only nuclear weapons, guarantee mutual assured destruction. Theoretically deterrence could fail if nuclear weapons were abolished or even reduced to a low level, where war might be seen as acceptable. Arms control agreements during the Cold War did not harm deterrence; there were still enough weapons and enough risk to keep a mutually assured destruction alive.

What can be gleaned from the histories of both chemical weapons during the World Wars and nuclear weapons during the Cold War is that though deterrence can be a good strategy for preventing any use of weapons of mass destruction, it does nothing to reduce stockpiles and only the complete elimination of WMD's can truly prevent their potential use. In fact arms races often arise from deterrence and tensions are only increased. Arm's control seeks to manage deterrence by keeping the number of weapons limited and controlled and thus prevent degeneration of an arms race into conflict. By solving the security dilemma, an arms race can be avoided as can the increase in tensions that often arises in such scenarios. After all, deterrence requires a level of preparing for war and willingness to go war, and arm's control seeks to move states in an opposite directions.

The relation between disarmament and arms control is an interesting one. Weapons of mass destruction are particularly susceptible to attempts to do both. Arms control would appear to be easier to effect than disarmament. Nonetheless many states and supranational groups officially call for disarmament⁶². Of course the path to disarmament necessitates arms control. Attempts at nuclear disarmament have many supporters and have quite a history. Nuclear disarmament has also been criticized as overly idealistic and unilateral disarmament has been, and is deemed, unacceptable to both the USA and the USSR. The START, SORT, and SALT treaties are certainly not aimed at disarmament. However nuclear arms control, it could be argued, has been driven by hopes for total nuclear disarmament. In contrast the CWC seeks complete disarmament with the destruction of all chemical weapons and a ban on production. About 93% of the world's chemical weapons stockpiles have been destroyed since the CWC took effect while more than 2/3 of the world's nuclear weapons have been destroyed since the height of the cold war. In both the cases of nuclear and chemical weapons disarmament has not been achieved. For chemical weapons it is more likely, with Russia officially declaring the destruction of its entire stockpile on September 27, 2017 and the USA committing to the complete destruction of its stockpiles (though cheating is a major concern). With nuclear weapons disarmament seems a distant possibility at best. This difference arises from the type of WMDs and their capabilities, with nuclear weapons, thanks to their destructive ability, being seen as necessary by superpowers with chemical weapons having no such distinction.

⁶² NATO. "Arms control, disarmament and non-proliferation in NATO" NATO, May, 2017.

The taboo surrounding certain types of weapons is certainly beneficial, and perhaps necessary and for effective arms control and especially disarmament. There is a taboo on the use of weapons of mass destruction and even something similar regarding possession. This is particularly the case with chemical weapons which saw widespread use in World War I but by now have been, as Richard Price states, “stigmatized as morally illegitimate.”⁶³ States do not want to be associated with chemical weapons. The Syrian state continually denies using them. Russia and the United States have committed to eradicating their stockpiles with previous stockpiles being kept purely for deterrence or research but nonetheless soon to be destroyed. Chemical weapons certainly have a psychological fear attached to them and present an unpleasant way to die but there are weapons that kill more people and are used far more often. There is a claim that the chemical weapons taboo arises because they are relatively ineffective militarily. Therefore they can be discarded without losing any potential military advantage. An argument goes that chemical weapons disarmament is less about lessening suffering and more about creating a playing field beneficial to Western military powers, particularly the United States. While there is something to arms control regimes being used to create certain, common, conditions for military combat, there is considerable disagreement regarding the idea that chemical weapons are militarily ineffective.

The chemical weapons taboo transformed from a taboo against their use (as during much of World War II) to a taboo against its possession. Price finds that the chemical weapons taboo is one of “genuine moral rejection” arising from questioning

⁶³ Price, Richard. "A genealogy of the chemical weapons taboo." *International Organization* 49.1 (1995): 73.

unrestricted warfare amongst the advanced industrialized great powers .⁶⁴ Whatever the reasons for the taboo, two things can be ascertained: one is that use, and now possession (without intent to completely disarm) is considered taboo and an abnormal behavior amongst states. Two is that in spite of this taboo chemical weapons have been used in Syria recently.

There also exists a strong taboo against the use of nuclear weapons. Though there is a taboo against use of all weapons of mass destruction nuclear weapons are particularly interesting as there is no similar taboo on possession of nuclear weapons as of chemical and biological weapons. To be sure a taboo exists, particularly against proliferation outside the nuclear club, but in mainstream discourse the continued possession of nuclear weapons, with no need to move to disarmament, by *certain states* is legitimized. However the taboo against the use of nuclear weapons is extremely strong, they have not seen combat use except for twice at the beginning of the new atomic age. The anti-use taboo is helped by the mass destruction they cause and that they possess the ability to devastate humanity to the point of extinction.

On the other hand there is legitimacy in possessing weapons of mass destruction. This is not really the case with chemical weapons, but certainly is with nuclear weapons. India's development of the atomic bomb is an example. The possession of nuclear weapons by the older possessor states is certainly recognized as legitimate and joining the nuclear club helps to legitimize the newer nuclear powers, for both domestic and international audience, as the equals of the great powers. The chemical weapons taboo is

⁶⁴ Price, Richard. "A genealogy of the chemical weapons taboo." *International Organization* 49.1 (1995): 102.

such that any legitimacy that may have once been gained from their possession vanished by the 1990s at the latest and nowadays possession carries a great stigma instead.

Arms control is a failure if agreements are not followed and are simply unenforced words on paper. Violation and the lack of sufficient verification are the primary obstacles to successful implementation. There must be some checks to make sure that states do not cheat. It is in many regimes interest, or at least their perceived interest, to cheat if they can get away with it as WMDs can shift the balance of power. Thus the question of who enforces arms control treaties and how they do so emerges. Certain states have considerable clout, particularly the United States, and can work effectively to enforce arms control. However, enforcement and verification tends to be more effective if done by an international regime. These are likely to be trusted to a greater extent and are seen less so as an imposition of the will of a few states will on others for reasons that are inherently political. Still these international regimes cannot function without the support of some powerful states.⁶⁵ And there is this sobering fact: modern-day arms control cannot be truly universal without support from all the permanent members of the UN Security Council.

Verification

To deal with verifications there must be somebody, whether it is an international arms control regime or an individual state, who is able to verify compliance. This is

⁶⁵ Üzümcü, Ahmet. "The Chemical Weapons Convention 1997-2017: Progress, Challenges and Reinforcing the Global Norm against Chemical Weapons." Organization for the Prohibition of Chemical Weapons, 20 Jun. 2017, Washington D.C. Keynote Speech.
https://www.opcw.org/fileadmin/OPCW/ODG/uzumcu/Speech_washington_forum_june_2017_final.pdf
As seen in this speech, where the OPCW is particularly concentrated on the United States support.

significantly easier for bilateral agreements, as the USA and USSR could just agree to a certain quantity and type of inspections on each other and only have to negotiate between themselves regarding the parameters. They could also just send their own inspectors to check the other. Verification measures for multilateral regimes can be much more difficult, as there are more opportunities for distrust and likely logistical and diplomatic obstacles. When a goal of an arms control agreement is to include as many countries as possible, who does the verifying can be a tricky business due to distrust and tensions existing between nations, which is the reason that verification is necessary in the first place. To be sure, verification, especially of a thorough variety is bad for nations trying to cheat, which is exactly the point. This gets into questions of enforcement. An international inspection regime independent of world governments is preferable, with the Organization for the Prohibition of Chemical Weapons being a good example. This helps smooth obstacles towards agreement allowing the comprehensive verification measures that must be undertaken in order to guarantee the success of arms control, and especially disarmament.

The major issues with verification are refusal to allow inspections (which is true for those who refuse to sign the CWC) and cheating by keeping undeclared facilities and stockpiles. In the case of the United States, there is some domestic opposition to inspections in the USA, although that has not stopped verification measure in the START agreements from being used. There are supposed constitutional restrictions on arms

control, as stated by Koplow, but he adds this does not impede arms control so much as guide and shape the implementation of verification inspections.⁶⁶

Sampling is a common method for verification. It takes into account “statistical population may be altered to conceal a violation” resulting in a contest between the inspector and the inspected.⁶⁷ This could be largely circumvented with comprehensive inspection of all appropriate facilities and stockpiles. This may be workable for disarmament, such as with chemical weapons, where the facilities are limited in number and the stockpiles are collected to be destroyed at a set number of locations, with the overlying notion that the party is committed to disarmament, and not hiding sarin in some hidden remote bunker. However for proper arms control it is harder and sampling may be the only method of verification as well as easier logistically. Sampling can still be successful however if proper models, procedures, and precautions are taken such as discussed at length by Dresher in 1962. Advances in verification technology and techniques means that if all facilities and stockpiles are open to inspection there is an increased likelihood that violations will be caught.

Another matter to keep in mind is that the inspectors, whether it be the OPCW or American or Russian inspectors, are looking for violations and cheating. This includes looking for undeclared stockpiles and facilities. This makes it increasingly difficult to cheat. At worst this can lead to a competition between the inspectors and the inspected. But this can be lessened if the inspector has substantial enough clout that if violations are

⁶⁶ Koplow, David A. "Arms Control Inspection: Constitutional Restrictions on Treaty Verification in the United States." *NYUL Rev.* 63 (1988): 229.

⁶⁷ Dresher, Melvin. *A sampling inspection problem in arms control agreements: A game-theoretic analysis.* No. RM-2972-ARPA. RAND CORP SANTA MONICA CA, 1962.

found the cost will be higher than the inspector is willing to deal with. For the OPCW this means support by major economic and military powers willing to intervene. For the USA and Russia it may mean the breakdown of the agreement and the removal of barriers to another arms race. It is generally in the best interest of the inspected to comply but they are more likely to do so if they have assurances that the other rival states are also complying, which inspections can provide.

Enforcement

Enforcement is another major part of arms control and ties in closely with verification. A state, particularly one closely adhering to realpolitik ideals, is more likely to adhere to arms control if another state, or an international coalition, sends signals that it would be costly to cheat. At the same time, it is beneficial to showcase benign intent and willingness to decrease to a lower level of armaments; a bare minimum necessary for deterrence, when there is still a lack of trust. There also ought to be an assurance that a state will not cheat and not capitalize on another states willingness to follow an arms control agreement. It is beneficial to arms control if violations are found for enforcement to be perceived as sure to both occur and to be damaging, whether through economic sanctions, or even military intervention. In order for sanctions to bite and military intervention to be realistic threat, it is quite important, and I believe necessary, for major power particularly the five permanent members of the UN Security Council, to be in agreement and willing to at least not oppose intervention, of an economic or military nature, in order for arms control to succeed.

Enforcement may take the form of economic and diplomatic sanctions and even military intervention. The point of enforcement is for the price for breaking an arms control agreement to be higher than what is gained by developing and possessing certain weapons technologies. Here it helps for power disparities to exist, if the violator is not a major power, and certainly hurts if the violator is a superpower. While theoretically economic and diplomatic sanctions could be placed on the United States this is near improbable given that this would be extremely detrimental to the world economy and likely for the cause of peace given the United States heavy involvement in the world (which is unlikely to end with sanctions) as well as a wide array of allies. Enforcement may appear to be easier for bilateral agreements, but this is troublesome as if one party withdraws from the agreement then it is effectively null and void and the other party has no reason to stick with the agreement, save for increasing diplomatic standing and seeking a propaganda coup.

Financial cost is another obstacle to arms control. While successful arms control is beneficial cost-wise there are costs involved in enforcing and acceding to it. Where arms control and disarmament demands the destruction of weaponry cost can become a major factor. It does take a certain level of infrastructure and knowhow to destroy chemical and nuclear weapons. This cost can be lessened if great powers destroy weapons or finance their destruction, although to lessen political tension this is best done with the possessor state accepting, and preferably asking for this aid.

Chapter Four: Case Studies

I proffer that arms control does lessen tensions and does reduce destruction when war breaks out; however it is not the primary factor in the prevention of war. Arms control has the opposite effect of an arms race, if properly implemented, leading to decreased tension and solving the security dilemma. Whether or not this occurs relies on the effectiveness of the arms control regime and the willingness of actors to comply and to enforce these matters. Lacking this willingness means that the success of any arms control regime remains doubtful. Nonetheless, even if arms control regimes are unable to prevent use and/or stockpiling, and do not lead to total disarmament, they can limit the quantity of weapons to a considerable extent so as to lessen active use and to reduce tensions.

I seek to answer, then, the primary question of whether arms control has reduced conflict and the likelihood of conflict amongst nations. This necessitates exploration of the secondary question: what makes arms control regimes and treaties successful? I examine the use and possession of chemical and nuclear weapons and their relations to arms control regimes. The primary actor in this is the state with its military and political power which has a major impact on interstate tensions and the success arms control regime. I consider the United States as the sole superpower in today's world. The other permanent members of the UN Security Council are great powers, having particular influence on arms control. The members of the G7 can also be considered great powers but though not uninfluential in arms control discourse, Japan, Italy, Germany, and Canada are less important in crafting and enforcing arms control regimes.

When looking at the CWC, START, and other arms control treaties and regimes obviously one question is how effective the agreements are in doing what they set out to do and in preventing the use of weapons such as chemical weapons and nuclear weapons. The primary question which I seek to answer however is if arms control advances the cause of peace and lessens the devastation of war, preferably by preventing it. I think it is necessary to recognize that arms control alone cannot solve these issues, and that arms control agreements must be backed up by ideas and actions which advance peace and condemn the use of certain weapons.

A. The Chemical Weapons Convention

Until the advent of the Chemical Weapons Convention attempts to limit the use, production, and storage of chemical weapons via arms control can be considered failures. Chemical warfare was infamously utilized in World War I and much later Iraq used mustard gas against Iranian troops during the Iran-Iraq War. During the Cold War chemical weapons stockpiles were present in many countries. There was even the possibility of expansion of stockpiles, with the UK in the 1980s considering redeveloping chemical weapons as a potential retaliatory measure against chemical attack.⁶⁸ There were bilateral moves between the USA and the USSR regarding limiting chemical weapons but despite the stigma surrounding chemical weapons it appeared that most stockpiles would remain.

⁶⁸ Malnick, Edward. "Thatcher government considered building chemical weapons stockpile". Daily Telegraph" 30 December 2014.

Why do states possess certain weapons is a question that must be answered in order for disarmament to proceed. Chemical weapons offer no legitimacy advantage. Rather the opposite is the case. Consequently it is security concerns that motivate possession. The imbalance in conventional military might is one which chemical weapons can partially alleviate, but nowhere near enough as the situation in Syria demonstrates, where chemical weapons have not granted the Syrian government decisive military advantage. Conventional military power is capable of countering the effects of chemical weapons, by striking from a distance, and issuing soldiers with gas masks as was done amongst coalition forces during Operation Desert Storm in case of an Iraqi chemical attack.

The Chemical Weapons Convention can be seen as a success: due to a drastic global reduction in chemical weapon stockpiles and the large number of nations that have acceded. There are 192 state parties to the CWC, and only Egypt, North Korea, and South Sudan have not signed the convention. Israel has signed but not ratified the CWC. In this measure, it is a success, with only four countries outside the CWC regime. But it is far from a complete success, as the chances of North Korea, Egypt, and Israel acceding are rather low. The CWC is also quite ambitious in its goal: the complete global elimination of chemical weapons. Yet, despite the ambitiousness of the goal it is strikingly close to reaching full disarmament. But again, achievement of this goal appears distant due to a few outliers. The CWC's verification procedures are admirable and the Organization for the Prohibition of Chemical Weapons (OPCW) providing a potential blueprint for future arms control regimes. What is especially

encouraging about the CWC, and supporting its claim to success, is that 96 % of the worlds declared chemical weapons stockpile since the CWC took effect has been destroyed . And most countries that declared chemical weapons stockpiles have completely destroyed said stockpiles. Moreover, all declared production facilities have been inactivated as well.⁶⁹

What is potentially worrying for the CWC, despite its successes, is that chemical weapons have been employed by the Syrian government since 2014, when the OPCW certified Syria's destruction of its entire declared stockpile. In March 2018 the UK sent the OPCW samples of a novichok nerve agent used to poison a former spy. The USSR developed the novichok agents and Russia is most likely to blame for the poisoning even though they deny possessing chemical weapons.⁷⁰ With other states too, undeclared stockpiles are of major concern as are undeclared production facilities, which may not be functioning currently but can begin production quickly. Here enforcement comes into play as does finding undeclared stockpiles and facilities. There are two questions I intend to investigate: has chemical weapons disarmament via the CWC decreased tensions and chances of conflict? And has the CWC/OPCW regime even lowered the chances of chemical weapons being utilized in warfare?

The OPCW regularly inspects all declared production facilities to verify that they have been shut down and destroyed, or converted to peaceful use. They are currently overseeing the destruction of the world's remaining chemical weapons production

⁶⁹ OPCW. "What has made the OPCW successful?" Feb. 2015.

⁷⁰ "Novichok: Nerve Agent Produced At Only One Site in Russia, Says Expert" Ewen MacAskill - <https://www.theguardian.com/world/2018/mar/14/nerve-agent-novichok-produced-russia-site-expert>

facilities (at least the declared ones).⁷¹ The OPCW's inspection protocol has been modified throughout the years.⁷² This ability to evolve and adapt is important given the non-static nature of the world. Accedence to the CWC allows for OPCW inspections with heavy verification powers, including challenge inspections. If the OPCW was refused access to requested sites, not only would that be a violation of the CWC, it would surely lead to international outcry. It is telling that no state has tried such a thing (although the chance for cheating by non-declared facilities and stockpiles is always possible). 24/7 inspections take place at chemical weapons destruction facilities, usually via CCTV due to hazardous conditions, to verify destruction.⁷³ The chemical industry is also open to inspections by the CWC to verify that industrial actives are as reported and precursor chemicals are not being stockpiled for weapons production. If there are allegations of use or of prohibited production facilities, then a fact-finding challenge inspection can be undertaken at the request of another member state. While no investigation has taken place as outlined in the CWC the OPCW did participate in a joint mission with the UN to Syria to investigate the chemical attacks there in 2013.

The Chemical Weapons Convention has prompted support for stockpile destruction and cooperation amongst states towards achieving it. The United States provided financial assistance to help destroy the Albanian, Libyan, and Russian stockpiles. Tensions were reduced, albeit temporarily, between Qaddafi's Libya and the international community as sanctions against Libya were lifted and relations normalized

⁷¹ Mesilaakso, Markku, ed. *Chemical Weapons Convention chemicals analysis: sample collection, preparation and analytical methods*. John Wiley & Sons, 2005.

⁷² OPCW. "List of New Inspection Equipment and Revised Specifications for Approved Inspection Equipment" Nov. 1998. -https://www.opcw.org/fileadmin/OPCW/CSP/C-III/en/C-III_DG.7_Rev.1-EN.pdf

⁷³Ibid.

when it agreed to destroy its chemical weapons. Here complete disarmament seems to have aided relations and decreased the chances for conflict.⁷⁴ The destruction of Russian chemical stockpiles allows the United States freedom to destroy its own stockpiles, with no need to keep a retaliatory stockpile. This benefits them both as no chemical arms race will take place between what were, by far the two largest possessors of chemical weapons.

B. Successes and Failures: State Case Studies

Of the countries that have signed and ratified the CWC it is only Iraq and the USA that have not yet destroyed their declared chemical weapons stockpile. Iraq's chemical weapons were remnants from before 1991, were known to the UN, and not in a usable state.⁷⁵ However, Syria remains an open question and is a greater cause for concern than either Iraq or the USA. Syria is also the only country (besides perhaps the DPRK) where undeclared stockpiles are a major concern, and where the potential for use is profoundly feasible. And there is of course the issue of the states that have not signed and ratified the CWC, as all, save for South Sudan, appear unlikely to do so anytime soon.

Albania had a large stockpile of chemical weapons with 16,678 kg of mustard gas, lewisite, adamsite, and chloroacetophenone. Albania signed the CWC in 1993, and declared a stockpile in 2003. This decision was potentially forced by the discovery of large quantities of mustard gas in several abandoned bunkers in 2002. Albania destroyed its chemical weapons at a cost of 48 million USD and complete destruction was

⁷⁴ Of course conflict did occur, result of the Libyan Revolution. But the cause there were internal and had nothing to do with chemical weapons.

⁷⁵ Schneidmiller, Chris (27 April 2009). "India Completes Chemical Weapons Disposal; Iraq Declares Stockpile". Nuclear Threat Initiative.

confirmed by the OPCW on July, 11 2007.⁷⁶ The USA assisted and funded operations to destroy the weapons.⁷⁷ Albania's willingness to disarm, and ability to receive outside assistance to do so, benefitted from a different regime declaring and destroying the chemical weapons from the Hoxha regime that had initially created the massive stockpile.

India ratified the CWC in 1996 but at the time said it did not possess chemical weapons. However, in June 1997, India declared 1,045 tons of mustard gas and committed to destroying this stockpile by 2009. This has been verified by the OPCW. India has a large chemical industry which benefits from Indian acceding to the CWC as it avoids potential sanctions for not doing so and allows Indian chemicals to be traded freely.⁷⁸ Thus accession removed potential obstacles to commerce and benefitted India's economy. India acquired chemical weapons in response to Pakistan's supposed acquisition of chemical agents and India acceded to the CWC knowing that Pakistan did so as well. Earlier India and Pakistan had signed an agreement for the complete prohibition of chemical weapons and that committed both states to sign the CWC. Even though India did later declare a stockpile after earlier claiming it did not have one, nowadays it is near certain that both states have no chemical weapons stockpiles.⁷⁹ Tensions are still high between India and Pakistan, and there were many reasons that are

⁷⁶ OPCW. "Albania the First Country to Destroy All Its Chemical Weapons" July 2007.

<https://www.opcw.org/news/article/albania-the-first-country-to-destroy-all-its-chemical-weapons/>

⁷⁷ Walker, Paul F. "Abolishing Chemical Weapons: Progress, Challenges, and Opportunities." *Arms Control Today* 40.9 (2010): 22.

⁷⁸ Kellman, Barry. "The Advent of International Chemical Regulation: The Chemical Weapons Convention Implementation Act." *Journal of Legislation* 25.2 (2015): 119.

⁷⁹ Lewis, James. P "Fact Sheet: Chemical Weapons and Their Destruction." The Center for Arms Control and Non-Proliferation, Mar. 2018. -armscontrolcenter.org/fact-sheet-chemical-weapons-and-their-destruction

more influential than chemical weapons. Nonetheless, their destruction eliminated one source of potential tension and the chance for a potential chemical arms race.⁸⁰

The India- Pakistan Agreement on Chemical Weapons was signed in 1992 and provided for the complete prohibition of chemical weapons; committing both nations to not develop, possess, or use chemical weapons, or to assist or encourage such activity. It also committed them to sign the CWC. Both nations signed it and both ratified it as well; India in 1996 and Pakistan in 1997. When the India-Pakistan Agreement was signed neither country declared a chemical stockpile. India later did so and Pakistan claimed that India used chemical weapons in Kashmir in 1999. India may not have used chemical weapons in Kashmir; this claim was never investigated by the OPCW, and not surprisingly, was denied by India. But India certainly possessed chemical weapons in violation of the India-Pakistan Agreement. India's commitment to the agreement was in serious doubt, as evidenced by its clear violation of it. However India's commitment and compliance to the CWC is not under any such scrutiny.

There are two questions concerning India's chemical weapons: one; why does India adhere CWC while it did not follow the India-Pakistan Agreement, and two; was the CWC really the reason for Indian disarmament. I contend that the answer to the second question is yes. As for the first question, and the reason why there is an affirmative answer for the second question, I believe it comes down to the arms control regime, and the CWC's regime is far better and more complex, with more verification and enforcement capabilities, than the India-Pakistan Agreement.

⁸⁰ This scenario is made more likely as India did acquire weapons in supposed response to Pakistan and the two country's nuclear programs have been predominantly in response to one another.

The India and Pakistan Agreement was not lengthy by any means, lacking complexity and capacity, and was reached independent of any other issues, such as the Kashmir dispute, which remains a higher point of tension than any arms control matter. The India Pakistan agreement was probably most useful in leading to the CWC being adopted by both countries, which would in turn lead to the destruction of chemical weapons in South Asia. Adoption of the CWC were points 2 and 3 of the agreement, and these were a success as both countries did accede to the CWC, and no longer possess any chemical weapons.⁸¹ However point 1 of the India-Pakistan agreement which prohibited development, production, and use of chemical weapons can be deemed as a failure, given that India did continue to possess chemical weapons after the agreement was signed. I believe this has to do with one major missing piece of the India Pakistan agreement; in contrast to the CWC no regime, or any method at all, was established for verification and implementation of the agreement. Certainly no regime or verification organization independent of the Indian and Pakistani governments was every even discussed. And one of the benefits of the CWC is the independent and empowered OPCW. Bilateral agreements can have verification regimes to push this forward, such as the case is with the START treaties. But India and Pakistan had no verification measures with each other regarding chemical weapons. This meant that India could continue to develop and possess chemical weapons with no consequences as long as Pakistan remained unaware of this, which is considerably easier with no verification measures in.

The CWC completely changed this as now India felt compelled to declare and destroy its chemical stockpile (no doubt aided by the relative non-necessity of chemical

⁸¹ INDIA-PAKISTAN AGREEMENT ON CHEMICAL WEAPONS

weapons). That the CWC had a sophisticated regime behind it, was backed by major powers, and had extensive verification measures compelled India for two reasons. One was that the CWC regime and the support behind disarmament (including within India, this was as much a voluntary movement as one that caused by outside circumstances) meant that it was in India's best interests to eliminate their chemical weapons and cohere to the international norm on this matter, avoiding becoming a pariah in any way. At the same time India's major rival Pakistan would have to accede to similar forces, or risk international disapproval and potential condemnation. Thus Pakistan would be assured to either not possess chemical weapons, or to be dealt a blow internationally, either one in India's interest.

The destruction of chemical weapons in South Asia may be helpful in the limited mitigation of conflict. Any use of chemical weapons by India or Pakistan would lead to condemnation by the other state (and the international community) leading to increased tensions and the potential for retaliation by chemical means, larger scale conventional operations, or even the threat of nuclear retaliation. Chemical weapons in short would not decrease tensions in South Asia and would risk ratcheting them up instead. That being said I believe the nuclear factor to be of much greater importance in South Asia, and also much more difficult to eradicate. The ascension of India and Pakistan to the CWC and the destruction of their chemical weapons has done little to promote peace, and tensions are still high, particularly over Kashmir. Any actual fighting has been very limited, not due to the CWC but because both sides recognize that a large scale war would be disastrous, especially with nuclear weapons. I ascertain that India's disarmament is beneficial, but

only slightly for reducing the level of conflict between India and Pakistan, by taking chemical weapons off the table, while at the same time doing nothing to prevent conflict itself.

There was a “state party” to the CWC that declared a chemical stockpile and then destroyed its stockpiles. South Korea is strongly suspected of formerly possessing a chemical weapons program and most probably was this party. South Korea is also still at war with North Korea. Arm’s control and disarmament may be able to reduce tensions, but if it is not bilateral it cannot do so. And in this instance it appears the South Korean chemical disarmament has had no effect on tensions between the two Koreas.

Libya developed chemical weapons with a large production facility at Rabta but this was rendered inactive by UN sanctions. These sanctions led to Libya abandoning all their WMD programs on December 19, 2003 in order to lift sanctions and normalize international relations. They destroyed much of their CW stockpiles from February 27 to March 3, 2004 under supervision of the OPCW. Then on March 5, 2004 they declared 23 tons of mustard gas and acceded to the CWC on June 2004. Libya is intriguing as they acceded to the CWC under heavy diplomatic and economic pressure. Though not under an open threat of military attack, given relations between the West and Qaddafi, this would have been probable enough to be something that Libya kept in mind when it decided to accede to the CWC and international norms. Iraq had also recently been invaded and Saddam Hussein overthrown and captured on the premise of possessing WMD’s perhaps leading the Libyan regime to believe that continuing its WMD program and possession was dangerous for its survival as well as detrimental for the country’s

economy and international relations. However the primary motivation was the stagnation of Libya's economy and its need for international investment as well as a desire to normalize relation with the West. To add to this Libya's WMD program was not all that successful according to some observers, and was far less important to Qaddafi than ending Libya's existing pariah status. Libya's disarmament has portions of a success story of peaceful disarmament and how disarmament can be effective. Though pressured by international orders and domestic concerns Libya was the one who approach the UK and USA and offered to give up their WMD program. Libya not only agreed to abide by a variety of treaties (it would also dismantle its nuclear program and put limits on it missiles) but also was subject to immediate and comprehensive verification inspections.⁸² In a showcase of the relative perception of nuclear vs. chemical weapons, a perception that is close to the reality of the matter in my view, Libya's nuclear program was dismantled first and rather quickly with the aid of the United States. When the Libyan Revolution broke out the destruction of Libya's chemical weapons was still ongoing. There were fears that some may have fallen into the hands of militants but in 2016 the last stockpile of precursor chemicals was sent abroad with the assistance of the OPCW and Denmark, the UK, and Finland.⁸³ The case of Libya shows that disarmament can be effective, and beneficial for peace, if it is widely supported the regime disarming and by more powerful states, and there are proper verification measures and a real potential for enforcement.

⁸² Squassoni, Sharon. "Disarming Libya: Weapons of mass destruction." LIBRARY OF CONGRESS WASHINGTON DC CONGRESSIONAL RESEARCH SERVICE, 2006.

⁸³ "Libya hands over last stockpile of chemical weapon ingredients". The Guardian. 1 September 2016. <https://www.theguardian.com/world/2016/sep/01/libya-hands-over-last-stockpile-of-chemical-weapon-ingredients>

The Russian Federation declared a chemical weapons arsenal of 39,967 tons in 1997. Due to the scale of the stockpile and financial difficulties Russia passed extended deadlines for destruction but continued to dispose of its chemical weapons in multiple facilities throughout the country. Russia finally destroyed its entire declared stockpile on September 27, 2017. However Russia allegedly has a considerable quantities of undeclared chemical agents, including the novichok agents, which are rumored to be deadlier than any other known chemical agent.⁸⁴ They also allegedly used novichok agents to try and kill Sergei Skripal in March of 2018.⁸⁵

The United States of America began reductions in its stockpile in the 1980s and in 1991 President George H.W. Bush committed the USA to destroy its entire chemical weapons stockpile. The majority of the US stockpile, close to 90%, has been destroyed with only 2 out of 9 chemical weapon depots remaining. The United States declared 27,771 tons of chemical weapons and currently has 2,770 tons. The United States estimates that it will eliminate its entire stockpile by 2023. Though it is moving relatively slowly the United States does appear committed and will almost certainly destroy its declared stockpile within the not too distant future, probably meeting the 2023 deadline.⁸⁶

The same cannot be said for the Syrian Arab Republic which perpetrated chemical attacks during the Syrian Civil War even after it acceded to the CWC and the OPCW

⁸⁴ Ellison, D. Hank. *Handbook of chemical and biological warfare agents*. CRC press, 2007.

⁸⁵ ⁸⁵ "Novichok: Nerve Agent Produced At Only One Site in Russia, Says Expert" Ewen MacAskill - <https://www.theguardian.com/world/2018/mar/14/nerve-agent-novichok-produced-russia-site-expert>

⁸⁶ The United States Department of Commerce, Bureau of Industry and Security. "United States Chemical Weapons Convention Web Site." United States Chemical Weapons Convention Web Site, Jan. 2001. www.cwc.gov

verified the destruction of Syria's declared stockpile in 2014.⁸⁷ Syria was late to join the CWC and only did so at the behest of the international community, including Russia, and with the threat of a United States-led military intervention hanging over the regime's head.⁸⁸

Russia, an ally of the Syrian government, played a major role in the destruction of Syria's chemical weapons. The US was threatening to, and willing, to carry out air strikes against the Syrian government in response to chemical attacks, a brazen crossing of the "red line" outlined by President Obama.⁸⁹ Substantial US military intervention against Assad would have heightened tensions in an already tense situation between the USA and its allies and Iran and Russia, major allies of the Assad government. The United States has attacked Syrian government forces a few times but it has been limited and in response to very specific infractions, including chemical attacks but also approaching US-backed forces, with Russia being notified beforehand if Russian forces are nearby.⁹⁰ The potential response to chemical attacks in 2013 promised to be much more devastating, with the potential to change the tide of the war. Russia preferred that the United States not directly attack the Syrian government, and potentially topple a Russian ally in the region, one which hosted Russian military bases. Thus a deal was reached to eliminate Syria's chemical stockpile and Syria acceded to the CWC.

⁸⁷ OPCW. "OPCW Fact-Finding Mission Confirms Use of Chemical Weapons in Khan Shaykhun on 4 April 2017." Jun. 2017. - <https://www.opcw.org/news/article/opcw-fact-finding-mission-confirms-use-of-chemical-weapons-in-khan-shaykhun-on-4-april-2017/>

⁸⁸ Pita, René, and Juan Domingo. "The use of chemical weapons in the Syrian conflict." *Toxics* 2.3 (2014): 391-402.

⁸⁹ There was substantial opposition domestically to such an intervention.

⁹⁰ Notification to the Russians would presumably occur in any circumstances.

Oddly enough, Syria presents a potential case in favor for arms control and disarmament lessening tension and conflict. The deal structured to get Syria to accede to the CWC and destroy its stockpile helped prevent the United States from becoming heavily involved and clashing with Russia and Iran even more than has already happened. There was considerable cooperation between the international community and the great powers to disarm Syria of its declared stockpile whereas. UN security council resolution 2118 required Syria to follow a timeline for the destruction of its chemical weapons and production facilities, and was supported by all 15 of the Security Council's members. This cooperation has not occurred since then with Russia keeping the Syrian government insulated from repercussions for continuing to use chemical weapons afterwards. In 2017 Russia blocked attempts by the United States and its allies to renew probes into chemical weapon use in Syria. By preventing full disarmament Russia has only increased tensions between it and the West, as well as worsened the situation in Syria.

The Syrian government certainly still possesses chemical weapons and has used them but it cannot be denied that its stockpile has been massively reduced. Despite claims that all Syrian chemical weapons were destroyed by 2014, Western intelligence agencies have long suspected Syrian "cheating."⁹¹ Still, a reduced stockpile should in theory be beneficial, but even if the stockpile is significantly reduced the continued use of chemical weapons in warfare makes arms control attempts surrounding it largely a failure. However Syria certainly has considerably less capability with estimates that only 1% of

⁹¹ Blanchard, Christopher M., Carla E. Humud, and Mary Beth D. Nikitin. "Armed conflict in Syria: overview and US response." *Current Politics and Economics of the Middle East* 6.2 (2015): 26. Also reported by Israeli intelligence, which reported 3 tons in 2017 with the likelihood of more being produced.

its original stockpile remains.⁹² The partial disarmament of Syria mean they cannot launch multiple large scale chemical weapons attacks and it is possible that if Syria had destroyed none of its weapons the war would be even more brutal, especially for civilians.⁹³

Of the states that have not yet acceded to the Chemical Weapons Convention South Sudan is undoubtedly the least concerning. On December 1, 2017 South Sudan announced that it “has all but concluded the process of joining the Organization for the Prohibition of Chemical Weapons.” The given reasoning behind this decision was that South Sudan would like to associate themselves with the “noble goals and objectives” of the OPCW.⁹⁴ South Sudan gained independence in 2011 and as a young nation it is not too surprising that it had not acceded to the CWC especially considering the internal problems, including a civil war, that are still occurring. South Sudan also never possessed, nor attempted to possess, chemical weapons. The commitment to accede to the CWC appears to stem from a want to join the community of nations and align itself with what is globally seen as a” noble cause”. By taking this step South Sudan helps to integrate itself better in the international community, removing a potential obstacle to South Sudan receiving assistance to rebuild, and perhaps even benefitting global peace, however slightly. However the other states that have yet to ratify the CWC and join the OPCW will be much more difficult to convince than South Sudan and they also threaten

⁹² Ibid, 26.

⁹³ It is also improbable that chemical weapons would turn the tide of the war and gain a victory for the Assad Regime.

⁹⁴ OPCW. “South Sudan to Join Chemical Weapons Convention.” Dec. 2017
<https://www.opcw.org/news/article/south-sudan-to-join-chemical-weapons-convention/>

to be much more impactful for global questions of war and peace surrounding chemical weapons.

There is substantial tension between North Korea and the international community, and the DPRK is not expected to dispose of its chemical weapons or accede to the CWC anytime soon. Given the secrecy surrounding the DPRK there are only broad estimates regarding its chemical weapons stockpile with South Korean intelligence estimating between 2,500 and 5,000 tons, with some of them likely stationed near the DMZ.⁹⁵ Tensions surrounding the DPRK stemming from weaponry are not centered on chemical weapons so much as ballistic missiles and nuclear weapons, which are particularly prominent nowadays, but chemical weapons still remain part of the DPRK's military equation. Any agreement with the DPRK to eliminate or even reduce its chemical stockpile, though unlikely to occur, would foreseeably reduce tension considerably, not least because it opens up the door for the international community to negotiate with the DPRK about other arms control measures and perhaps the normalization of relations.

Egypt deployed phosgene and mustard gas during the North Yemeni Civil War in the 1960s and still maintains a chemical weapons capability. The size of the current Egyptian arsenal is substantial but unknown. Egypt possesses chemical weapons as a deterrence measure in an attempt to neutralize Israeli military power and nonconventional retaliatory options.⁹⁶ Since 1993 Egypt has a policy of refusing to sign the CWC and not destroying its chemical weapons until Israel accedes to the Nuclear Non-Proliferation

⁹⁵ Republic of Korea Ministry of National Defense, *Defense White Paper*, 2014.

⁹⁶ Shoham, Dany. "Chemical and biological weapons in Egypt." *The Nonproliferation Review* 5.3 (1998): 53.

Treaty. For Egypt chemical weapons are a counterweight towards Israeli nuclear weapons but they are just as much a bargaining chip to attempt to bargain away the Israeli nuclear arsenal.

Israel also possesses chemical weapons, though its stockpile is undeclared and its size is unknown. Israel has signed the CWC but has not ratified it. Israel maintains an arsenal as a counter to chemical weapon stockpiles in antagonistic Arab states, primarily Iraq, Syria, and Egypt. Israel refuses to ratify the CWC as long as other Middle Eastern States possess chemical weapons and refuse to recognize Israel. This is fairly consistent with the Israeli regional outlook and their concern with WMD's throughout the Middle East. In 1997 Defense Minister Yitzhak Mordechai about ratifying the CWC said, "I think that we have to wait and see how things develop. The problem is that some of the states in the region are not signing, and there is no way of inspecting those who are [not signing]."⁹⁷ Egypt does recognize Israel and Syria has acceded to the CWC, but they both still possess chemical weapons and there is cause for Israeli security concerns.

Consternation about Iran (which does not possess chemical weapons) has become particularly pronounced in recent years, adding to concerns about Egypt's refusal to sign the CWC and Syria's continued use of chemical weapons This likely means that until these issues are solved, or a deal is reached that includes Egypt ratifying the CWC and Syria actually adhering to the CWC is reached, Israel will remain a non-party for the foreseeable future.

⁹⁷ Fitzpatrick, Mark. Time for Israel and Egypt to Abjure Chemical Weapons, Politics and Strategy, August 6, 2014, <https://www.iiss.org/en/politics%20and%20strategy/blogsections/2014-d2de/august-bce1/time-forisrael-and-egypt-to-abjure-chemical-weapons-0490>

Egypt and Israel could reduce tension between themselves and in the region if they acceded to the CWC. If one state does not possess chemical weapons stockpile there may be no need for the other state to acquire a corresponding stockpile for deterrence or to develop other countermeasures that are more than just defensive in response. There are certainly political costs for not acceding to a treaty that the rest of the world's states, save the DPRK, will accede to and more international isolation is possible.⁹⁸ There are also potential benefits if either Egypt or Israel unilaterally ratifies the CWC and destroys their chemical stockpile. This puts increased political and moral pressure on the other state to disarm as well. Bilateral ratification, but even unilateral ratification, would improve international perception and lead to decreased tensions between two historically antagonistic regional powers.⁹⁹

C. START and New START

The New Strategic Arms Reduction Treaty builds on START I and SORT (Strategic Offensive Reductions Treaty) as well as the earlier SALT I and SALT II which were talks (Strategic Arms Limitation Talks) that led to agreements between the USA and the USSR. SALT I led to the Anti-Ballistic Missile Treaty (ABM Treaty) which stood until June 2002 when the United States withdrew. The ABM treaty was agreed upon to prevent an arms race with the advent of anti-ballistic missiles which threatened to defend against ballistic missiles (which would be nuclear tipped). The arms race would

⁹⁸ Taylor, Nicholas AJ, Joseph A. Camilleri, and Michael Hamel-Green. "Dialogue on Middle East Biological, Nuclear, and Chemical Weapons Disarmament: Constraints and Opportunities." *Alternatives* 38.1 (2013): 86.

⁹⁹ Bar-Yaacov, Nomi. "Achieving Universality of the Chemical Weapons Convention in the Middle East." *Survival* 57.6 (2015): 160.

stem from each state attempting to gain an advantage over the other by honing their ability to stop the other's missiles while improving their offensive capability so that their missiles would get through. This was more dangerous than just any arms race as it risked shattering mutual assured destruction; the entire basis for nuclear deterrence. The ABM Treaty limited ABM placement to around Washington D.C. and Moscow and ICBM silos and limited each state to 100 anti-ballistic missiles thus assuring that the nuclear deterrent would remain.¹⁰⁰

As the Anti-Ballistic Missile Treaty's eventual collapse demonstrates, a major problem with bilateral agreements is that they terminate if one party withdraws, leaving the other state no reason to stick to the agreement and increasing the potential for an arms race, or at least removing obstacles to such an arms race occurring. Indeed in 2015 Vladimir Putin said it was not military conflicts but decisions such as "US unilateral withdrawal from the Anti- Ballistic Missile Treaty" that lead to a Cold War. This ought to be taken with a grain of salt. After all military conflicts do increase tensions and can help cause a Cold War. But the failure of arms control agreements does so as well. Unilateral withdrawal changes the global security landscape for the worse, exacerbating it with by causing a decrease in trust and added uncertainty.

As of 2017 the USA and Russia have over 90% of the world's nuclear weapons. All countries are well below the limits set by New START, save for the USA and

¹⁰⁰ Treaty on the Limitation of Anti-Ballistic Missile Systems, May 26, 1972, U.S.-U.S.S.R., 23 U.S.T. 3435, T.I.A.S. No. 7503

Russia.¹⁰¹ Thus a bilateral treaty can lessen not only bilateral tensions but also global tensions. Although this is less the case nowadays than during the Cold War, tensions and conflict between the USA and Russia still affect the rest of the world and Europe in particular. If nuclear war were to break out between these two countries the global climate consequences alone would be devastating. Russia and the USA are more important for the global state of war and peace than most countries due to their military preeminence, their mass nuclear arsenals, and the risk that many of the other nuclear powers might follow the American and Russian lead. At the very least it is hard to conceive of a world where any country has more nuclear weapons than the USA or Russia and thus bilateral arms control matters a great deal. New START and START reduced the world's nuclear stockpile considerably, with START I leading to a mass reduction in the global number of nuclear arms.¹⁰²

START III was a proposed nuclear disarmament treaty between the United States and Russia that sought to drastically reduce both countries' nuclear arsenals to no more than 2,000 or 2,500 strategic nuclear warheads with the potential for a limit of only 1,500 nuclear warheads per country. Measures would be negotiated regarding the transparency of nuclear warhead stockpiles and their destruction with the aim to promote the irreversibility of these reductions. However negotiations fell through. The United States Joint Chiefs of Staff strongly opposed Russian proposals to reduce stockpiles to 1,500 or fewer warheads. Russia strongly opposed NATO's eastward expansion and the American

¹⁰¹Kimball, Daryl, and Tom Collina. "Nuclear weapons: Who has what at a glance." Arms Control Association, November (2012).

¹⁰² Cirincione, Joseph, Jon B. Wolfsthal, and Miriam Rajkumar. *Deadly Arsenals*. Washington: Carnegie Endowment for International Peace, 2002, 209.

plan to build a missile defense system in Europe (which could potentially render Mutual Assured Destruction moot) and hinted that START III would be subject to the resolving of these issues.¹⁰³ These treaties do not occur in a vacuum. Difficulties in reaching any arms control agreement largely stem from other events and concerns. The impasse in START III negotiations led to the weaker Treaty Between the United States of America and the Russian Federation on Strategic Offensive Reductions (SORT). The SORT treaty was in force from June 2003 to February 2011 and limited the nuclear arsenal to 1,700-2,200 deployed warheads each.¹⁰⁴ Though less than hoped for this was still a massive reduction from the numbers maintained during the Cold War.¹⁰⁵

The New START (Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms) was signed on April 8, 2010 and entered into force on February, 5 2011 as the successor to SORT. It lasts till 2021 with the potential to extend the treaty till 2026. It is unclear what will replace New START if anything (I expect some agreement will be reached and hope that it continue to reduce nuclear capabilities). New START reduced the number of strategic missile launchers by half (arms control by limiting delivery mechanisms), and limits the number of deployed nuclear warheads to 1,550. It limits the number of deployed and non-deployed Intercontinental Ballistic Missiles, heavy bombers equipped for nuclear armaments, and Submarine Ballistic Missiles, all the legs of the nuclear triad, to 800 and the number of these delivery mechanism that are deployed to 700. For verification purposes New START allows for

¹⁰³ Arms Control Association. "The START III framework at a glance." *Fact Sheets* (2003).

¹⁰⁴ Woolf, Amy F. *Nuclear Arms Control: The Strategic Offensive Reductions Treaty*. DIANE Publishing, 2010.

¹⁰⁵ Boese, Wade, and J. Peter Scoblic. "The jury is still out." *Arms Control Today* 32.5 (2002): 4.

satellite and remote monitoring of most of these delivery mechanisms, and for 19 on-site inspections per year.¹⁰⁶ However, New START does not place limits on operationally inactive nuclear warheads in stockpile, which both the USA and Russia have thousands of and can quickly attach to missiles or to bombers if tensions should increase to such a point where this might be deemed necessary. The hope is that New START will decrease the chances of this happening by 1) preventing a nuclear arms race through placing numerical limits on delivery mechanisms and nuclear warheads and 2) allowing nuclear deterrence centered on mutual assured destruction to continue.

As a bilateral treaty New START does nothing towards limiting nuclear proliferation, though it helps decrease global anxiety. However as a means to globally reduce the number of nuclear arms and a prevent nuclear arms race it has at the potential to be highly effective. This is because the USA and Russia being the largest nuclear powers by far. It is possible that other nuclear countries may follow the lead of the USA and Russia, particularly the USA's NATO allies. The UK developed nuclear weapons as a deterrent to the Soviet Union, with uncertainty over whether America would fight for Britain and risk potential annihilation. If Russia does not pose a major threat, particularly a nuclear threat, then the UK nuclear arsenal would be unnecessary. Of course, this would have to be true for other potential threats but if the USA and Russia disarm it is highly unlikely that the UK won't follow suit. The primary use of this bilateral treaty is that even though it involves only two players, these two players are the ones capable of

¹⁰⁶ Woolf, Amy F. "The New START Treaty: Central Limits and Key Provisions." *Russia, China and Eurasia* 28.5/6 (2012).

bringing about nuclear Armageddon, as well as wielding influence over other nuclear powers.

D. Nuclear Faceoff: Case Studies

When discussing nuclear weapons and their relation to arms control treaties I examine nuclear deterrence and what role this has in reducing, or increasing, the chances of war and tensions that increase conflict in the periphery. The mitigation of war is not as much of an issue in regards to war between the USSR and the USA with prevention of any war being the goal. Conventional war would be devastating enough and nuclear war would be on another level of destruction with very real potential for the annihilation of both states. Nuclear arms control is different from other sorts with its focus being purely on prevention of any war with nuclear weapons, rather than also the mitigation of a conflict. Most arms control regimes seek prevention of war with certain weapons, but if full scale war does break out between two powers, both armed with say cluster bombs, there is still reasonable hope that the use of these weapons may be prevented. Even if these weapons are used, devastating though it may be, they would not overly threaten the security of either state any more than war without them would, nor cause entire cities to be destroyed in an instant and regional, and perhaps world, ecosystems to be severely damaged. The unique devastation caused by a single nuclear weapon and the improbability of preventing nuclear attacks if attempted, completely changes the equation. It is absolutely vital, then, to prevent nuclear war at any cost.

As far as nuclear weapons go no nuclear threat is minor but it can be reasonably said that during the height of the Cold War the nuclear confrontation between the USA

and Russia dwarfed other nuclear threats. Nowadays North Korea has nuclear weapons and has had recent confrontations with Japan, South Korea, and the United States. The DPRK is seemingly impervious to arms control agreements, though not necessarily to economic sanctions and military threat. It is however rational for The DPRK to continue its nuclear program as a method to try and guarantee the regimes survival. Pakistan and India are also nuclear armed and the risk of nuclear war on that front may be higher than between the USA and Russia. There is also a question about what to do if a nuclear armed Iran should arise. Many of these countries with smaller nuclear arsenals pose a greater threat to world security due to the increased chance that they make use of their nuclear weapons or make use of a nuclear shield to act aggressively in the region. Of course the United States and Russia are not immune from this, and although the chances they use their nuclear arsenals can reasonably be considered lower, this does not mean that the chances nuclear weapons anywhere in the world will be used is too high. The probability is higher than is comfortable to be sure, but that has more to do with the devastation these weapons cause than with the probability of use.

Another potential to be an outlier is Iran. There is no indication that Iran has any interest in chemical weapons and they do accede to the CWC. However they may very well develop nuclear weapons even though there is an agreement currently in place to attempt and prevent that from happening. Anything on Iran is speculative, but a nuclear-armed Iran would be worse for the Middle East, Israel already has nuclear weapons and Saudi Arabia may very well obtain them if Iran does as well. Thus, the mini-cold war, that is already occurring, will reach new heights and the stability-instability paradox will

hold true resulting in a more violent Middle East. At the same time the Iranian regime would probably feel more secure with a few nuclear weapons.¹⁰⁷ I do not think it is likely for a nuclear arms control agreement to be implemented, without significant outside pressure anyhow, between Iran and Israel. The lack of an agreement would make the situation worse.

The United States and Russia have intervened militarily in other state's affairs many times in the 21st century, and can do so without threat of military reprisal by the other, which in my view is due largely to the nuclear umbrella (as well as the absurd cost of a conventional war). The nuclear umbrella is present as long as mutual assured destruction is. War between the United States and Russia threatens to be far more devastating than any conflict ever seen and this was even more so the case during the Cold War. Mass decreases in each state's nuclear arsenals may be little comfort as nowadays the Russian and American arsenals are capable of basically destroying the other state, causing major worldwide ecological catastrophe, and potentially even causing human extinction.¹⁰⁸

Nuclear Disarmament

The obstacles to nuclear weapons disarmament are so ferocious as to make it extremely unlikely. If the world ever hopes to get there, and there is not an unreasonable case to be made that this would be dangerous, arms control is a necessary step forwards.

Nuclear weapons arms control works best in conjunction with the nuclear deterrent. A

¹⁰⁷ Cordesman, Anthony H., Bryan Gold, and Chloe Coughlin-Schulte. *Iran: Sanctions, Energy, Arms Control, and Regime Change*. Rowman & Littlefield, 2014, 124.

¹⁰⁸ Starr, Steven. "Nuclear War, Nuclear Winter, and Human Extinction." *Federation Of American Scientists* (2015), 3.

nuclear arsenal is the best deterrent, not just against nuclear attack but also other forms of attack, including a chemical one, and getting rid of nuclear weapons and thus the nuclear deterrent, would increase the chances for war. War arising from the spiraling of the security dilemma can be prevented if the nuclear deterrent promises mutual assured destruction. But disarmament would mean no mutual assured destruction and thus increased potential for war. This is not assured to occur but it is too likely in the current world system and thus far too much of a risk for Russia and the USA to take a chance on nuclear disarmament. Unilateral nuclear disarmament is a non-starter for the USA or Russia. We should not think of disarmament as a complete impossibility though, but rather should recognize the obstacle currently preventing it from being seriously considered.

When examining nuclear disarmament it would be particularly instructive to look at two countries that relinquished their nuclear weapons. This would seem to be an odd choice given that nuclear weapons are commonly asserted to be the most powerful weapons in the world, conferring legitimacy and status upon the possessor state, and assuring security via nuclear deterrence. In fact part of the reason that the Ukraine and South Africa were willing to give up nuclear weapons was because it actually benefited their status and legitimacy, and was not seen as being that vital to security compared to the legitimacy gained. Ukraine is an intriguing case as it inherited nuclear weapons from the Soviet arsenal, an arsenal that Russia claimed the entirety of as the successor state to the USSR. Russia did have a level of legitimacy in their claim to nuclear weapons under Ukrainian control. Ukraine was also encouraged by the USA and NATO to give up its

nuclear arsenal, supportive as they were of Russia's successor claim in the relatively optimistic days soon after the fall of the Soviet Union. This encouragement was vital as Ukraine looked to the West for support. Ukraine also had adopted an anti-nuclear weapons stance as part of their struggle for independence, attempting to distance themselves from the Soviet Union which was partially defined by its nuclear arsenal. This is due largely to nuclear proliferation norms which threatened to place a potentially dissenting Ukraine as a "rouge state" like Iraq or North Korea.¹⁰⁹ There were later questions about whether Ukraine's disarmament was the wisest choice given the War in the Donbass and Russia's annexation of the Crimea. It is far less plausible that Russia would be so aggressive towards a nuclear-armed Ukraine. This is a potential counterpoint to nuclear disarmament; without the ultimate weapon to counter other disparities a state opens itself to aggression.

Perhaps even more vital in studying the potential for nuclear disarmament and what pushes states to give up weapons of mass destruction is the case of South Africa. An increasingly isolated South Africa, under the apartheid regime, developed nuclear weapons by the 1980s and had six bombs by 1989 when they discontinued their nuclear program, destroyed their nuclear bombs, and even acceded to the treaty on the non-proliferation of nuclear weapons in 1991. Apartheid South Africa may have also had a chemical weapons program but this was also discontinued completely (if it even existed, which is likely, though to what extent is not clear). Of course by 1991 South Africa was changing and the Apartheid regime would soon peacefully give way to modern day South

¹⁰⁹ Sagan, Scott D. "Why do states build nuclear weapons? Three models in search of a bomb." *International security* 21.3 (1997): 54-86.

Africa. One theory holds that South Africa dismantled its bombs due to a radical reduction in external security threats. Cuban forces withdrew from Angola, where South African forces had clashed with them in the 1980s, Namibia, where there had been fighting and insurgency, was granted independence from South Africa, and the risk of Soviet sponsored attack was eliminated with the fall of the Eastern Bloc.¹¹⁰ I certainly believe there is a large amount of truth to this theory but I also believe that in order to explain complete nuclear disarmament internal political changes must also be credited.

In 1989 F.W. de Klerk was elected and in 1994 the new South Africa would emerge. Some of the end of Apartheid was due to the end of the Cold War but the process began in the late 80s. The end of the Cold War cannot fully explain South Africa's willingness to disarm. The Apartheid regime almost certainly feared nuclear weapons being in the hands of the ANC (or even potentially white extremist) and thus decided to dismantle them.¹¹¹ While there is no concrete evidence to support this (and the Apartheid regime would have kept that well under wraps) it is near certain these concerns did play a major role in South Africa's decision to disarm. This domestic reasoning behind this disarmament does suggest that nuclear disarmament in the vein of South Africa is, at best, extremely unlikely.

There have been suggestions to put nuclear weapons, or the capability to create nuclear weapons, under international control. Any sort of exclusive international control over any weapon is basic non-starter without any reasonable chance of happening. As long as nation-states are dominant on the world stage I see almost no chance for this sort

¹¹⁰ ibid

¹¹¹ ibid.

of idealism to be implemented and will not discuss it further. Arms control that is implemented by an international body rather than as agreements between nation states is also unlikely. This is as true for chemical as for nuclear weapons. However nuclear weapons can reasonably be controlled through agreements between a few states given the difficulty of nuclear proliferation and the guards in place against it. These anti-proliferation measures must also be controlled by agreement and cooperation. This is not to say that international bodies and regimes, independent from nation-states, do not have a role to play, indeed as the Organization for the Prohibition for Chemical Weapons shows they can be vital.

Why States Possess Nuclear Weapons

The nuclear deterrent and security concerns are the primary motivations for the nuclear arsenals of India, Pakistan, North Korea and Israel and until the security situations in these regions improve there is no reason to hope that disarmament may take place worldwide. Arms control is still quite possible and can be quite beneficial if it does manage to reduce tensions, or at least prevent them from rising. The security concerns these states face however go much deeper and the chance of solving any of them in our lifetime is unlikely. These states are all outside of the Treaty on the Non-proliferation of Nuclear Weapons and as long as they possess weapons the USA and Russia will almost certainly do so as well. The United States' NATO allies and close non-NATO allies (such as South Korea, Japan, and Australia) rely at least partially on the American nuclear deterrent for security. This was particularly accurate during the Cold War, but is still true today. There is steep imbalance in conventional military forces worldwide which makes

disarmament improbable and arms control potentially difficult. Nuclear arsenals, even small ones, help to alleviate any conventional imbalance as is the case with Russia. With enough nuclear weapons to destroy the United States it does not matter that the United States conventional military is far and away the best in the world, with a military budget that dwarfs any other country and a clear superiority in its navy and air force. But American conventional military superiority is no threat to Russia thanks to Russia's immense nuclear deterrent. Thus any nuclear-armed country that is concerned about the United States is unlikely to disarm or decrease its capabilities to an extent where the USA would have a clear advantage over them if they can help it (as the US would over Russia if both agreed to nuclear disarmament). This means that arms control must be careful to not create an imbalance in power that was not already present, or else it may well usher in a riskier world. It is extremely unlikely that such an agreement would ever be reached as the states that the agreement is a detriment towards would reject it outright.

Arms Control and the Prevention of Nuclear War

How effective is arms control in preventing nuclear conflict and the use of nuclear weapons? Regarding bipolar relations between the USA and the USSR (and later Russia) the answer is probably not much. It can also be argued that not too much was done to limit the potential destructiveness either. Even the most drastic reductions still left enough nuclear weapons to destroy both states. Where arms control may have been more influential in doing is in lessening tensions between the superpowers and decreasing the chances for any conflict, not just a nuclear conflagration, but proxy conflicts as well. I can find no evidence that the START and SALT treaties increased tension or that they

were the main reason for the lack of nuclear war. Arms control is neither a lone guarantee of peace nor detrimental towards it.

What cannot be disputed is that nuclear war did not occur during the Cold War and has not occurred since then. Indeed, the biggest threat today may be North Korea, not Russia, when nuclear arms come into play. While there are a host of other reasons why there is no war between the USA and Russia, the USA and Soviet Union did come close to war during the Cold War, such as during the Cuban Missile Crisis and nuclear false alarms in 1983 and 1979. SALT I and the Anti-Ballistic Missile treaty were signed in 1972; this means there were 20 plus years of two nuclear armed superpowers facing off against each other with no arms control treaties regarding their most devastating weapons, a period which includes the Cuban Missile Crisis. After both SALT treaties were signed not only did the superpowers retain the capability to destroy each other, there were several other close calls.¹¹² Therefore, it is difficult to conclude that arms control had a major effect in preventing the Cold War from turning hot.

Rather than arms control, I believe mutually assured destruction was the primary force behind preventing war. There was considerably conflict during the Cold War, many of them proxy conflicts, but the USA and USSR never really came to blows. The cost for both countries would be too high. It is daunting enough given each state's conventional capabilities, but given nuclear weapons, destruction was guaranteed and any victory would be of an extraordinarily pyrrhic sort, with the realistic annihilation of both

¹¹² Sagan, Scott Douglas. *The limits of safety: Organizations, accidents, and nuclear weapons*. Princeton University Press, 1995, 212.

countries.¹¹³ In order to prevent such a war, mutual assured destruction must be, at the very least perceived as (and this usually means actionable), assured for both sides. The nuclear ICBM helped make this a reality, along with the lack of any defenses that could effectively prevent nuclear devastation. The nuclear triad specifically aids to support this assurance. Enough bombers with nuclear weapons would be likely to get through to their targets, but I feel it is not inaccurate to say that the bomber wing is relatively unimportant these days as far as nuclear deterrence goes. Nuclear tipped ICBM were and are capable of hitting anywhere in the USA and Russia and are difficult to shoot down. It is nigh impossible to down the opponents entire arsenal with any missile defenses.¹¹⁴ There are also methods to prevent the destruction of the ICBM arsenal in a first strike and guarantee that they could be used against the enemy. Still the most important leg of the nuclear triad is the submarine based nuclear arsenal: these cannot be found and destroyed in a reasonable timeframe, and indeed doing so at all is difficult. Nuclear deterrence and mutual assured destruction as a means to prevent war relies on technology, the nuclear weapons themselves and a means to deliver them that cannot be countered are necessary. This also requires a large number of nuclear weapons in ones arsenal. So it might appear that arms control would be counterproductive.

KN Waltz argues, and he is not alone, that more nuclear weapons may be better.¹¹⁵ This is partly a continuation of the theory of nuclear deterrence via mutual assured destruction that prevented the Cold War from turning into World War III (even

¹¹³ Turco, Richard P., et al. "Nuclear winter: Global consequences of multiple nuclear explosions." *Science* 222.4630 (1983): 1288-1290.

¹¹⁴ Fetter, Steve, et al. "Countermeasures: A technical evaluation of the operational effectiveness of the planned US national missile defense system." (2000), 31-34.

¹¹⁵ Waltz, Kenneth N. "The Spread of Nuclear Weapons: More May Be Better: Introduction." (1981): 1.

while it turned hot in many proxy conflicts in the peripheries). It is important to ask how numbers impact nuclear deterrence, as there is only a limited quantity of weapons required for mutual assured destruction. After all, there being no need to destroy the world more than once (as the United States had the capability to do at the Cold War's height).¹¹⁶

Mutual assured destruction, and thus the entire basis for nuclear deterrence, can be threatened by protective measure which prevents an enemy's nuclear weapons from striking. Early on in the Cold War this potentially included an initial preemptive strike which destroyed the nuclear infrastructure of the enemy state before it could be launched against the aggressor state. However this has been taken off the table with secondary strike capabilities, particularly the submarine component of the nuclear triad, and system like the Russian perimeter system which is supposed to be able to launch a strike if it detects mass nuclear strikes. These measures are publicized enough so that the world is aware of these indefensible second strike capabilities. This keeps mutual assured destruction and its prevention of war alive. Attempts to prevent already launched nuclear missiles from striking their targets, such as the American Strategic Defensive Initiative, also threaten mutual assured destruction, and thus can increase tensions and the chance of nuclear war if one side thinks it may be winnable due to their defenses.¹¹⁷ Thus, one benefit of nuclear arms control is the maintenance of mutual assured destruction. i

In a blow to the overall benefits of arms control the current tensions between the United States and Russia have little to do with nuclear warheads (and absolutely nothing

¹¹⁶ Kennan, George Frost. "Nuclear delusion: Soviet-American relations in the atomic age." (1982), 11.

¹¹⁷ *Ibid*, 49.

to do with their chemical weapon stockpiles). On the other hand in the past there was a great deal of tension between the USA and the USSR directly related to their nuclear arsenals, and it can be argued that the START treaties have helped make this a point of relative non-contention, reducing overall tension by eliminating one area on which to strain relations. There is some Russia-USA tension surrounding anti-ballistic missile systems and chemical weapons in Syria, and arms control could help alleviate these issues as well.

However, arms control is still important in the reduction of tensions. As nuclear competition accelerated between the USA and the USSR both perceived heightened danger as the number of nuclear weapons increased and the methods of delivery became ever more effective. Tensions increased and several of the close calls occurred during the ramp up of the Cold War that began in the 1970s and reached its height in the 1980s. The stability of the world was increasingly suspect with the SALT II treaty not being ratified by the United States senate in response to the Soviet invasion of Afghanistan, with the Soviets responding in turn.¹¹⁸ This runs counter to arms control and history shows that when arms control treaties are refused and scrapped tensions worsen. So, at the very least, arms control is worthwhile in order to prevent an increase in tension over armaments.

India and Pakistan

¹¹⁸ Caldwell, Dan. "The Salt II Treaty." *The politics of arms control treaty ratification*. Palgrave Macmillan, New York, 1991, 281.

In discussing the effectiveness of arms control versus military deterrence, both nuclear and conventional, in preventing conflict, India and Pakistan present an intriguing case study. Both states possess nuclear weapons, and have signed an agreement over nuclear weapons but are not party to the Non-Proliferation Treaty. They have also been on the brink of war, and have even fought each other since then. Neither state has used nuclear weapons however, and nuclear war would surely cause heavy casualties amongst the large population of South Asia.¹¹⁹

The Agreement between India and Pakistan on the Prohibition of Attack against Nuclear Installations and Facilities, signed in 1988 and entering into force in 1991, held both India and Pakistan to refrain from undertaking or participating in an action aiming to destroy or damage nuclear installations or facilities.¹²⁰ The non-nuclear aggression agreement does nothing to limit the number of nuclear weapons, delivery mechanisms or defense mechanisms, but it does aid the continuation of nuclear deterrence and mutually assured destruction to prevent major war. It also requires each country to inform the other of the locations of all their nuclear facilities and inform the other country if there is a change. There are no compliance measures or verification beyond the annual exchange of a list of facilities with the exact location. Indeed, this not an arms control agreement in the traditional sense but it does serve deterrence by preventing attacks on facilities that develop and produce nuclear weapons, keeping the nuclear threat active and, thus, allowing nuclear deterrence to continue. The disclosure of facilities and their locations

¹¹⁹ Mills, Michael J., et al. "Multidecadal global cooling and unprecedented ozone loss following a regional nuclear conflict." *Earth's Future* 2.4 (2014): 174.

¹²⁰ "India-Pakistan Non-Attack Agreement". *Work of Governments of India and Pakistan*. Published by Nuclear Threat Initiatives (NTI).

provides for deterrence, as any attack on these facilities, or large scale attack in general, would be met in turn. With all facilities and their exact locations known to the enemy, retaliation would be near certain, and likely devastating (particularly as attacks on some of these facilities can be harmful to the nearby civilian populations, causing widespread casualties). Therefore, the likelihood for attack would be decreased. There has, of course, been concern that the lists of facilities are incomplete and this is a likely possibility.

I believe this agreement shows not only the general state of Indian-Pakistani nuclear affairs, but also that it is not arms control agreements, but deterrence that has been the main force behind preventing an outbreak of nuclear conflict. I do not think the agreement helps to prevent lower level conflict, such as artillery duels in Kashmir (supported by the fact that this has occurred since the agreements been in place). But it may aid in preventing any conflict from spiraling into much bigger, potentially nuclear conflict, through adding assurance to mutual assured destruction.

Hagerty holds that nuclear deterrence has become the norm in South Asia and has been fully embraced.¹²¹ Arms control has been pushed aside, although it could conceivably become more important, and it will be unlikely to prevent conflict. However, the potential to decrease tension is high, especially given how much tension has been produced by the Pakistani- Indian nuclear arms race. But, Hagerty is doubtful of the potential for nuclear deterrence, with actual mutual assured destruction consisting of second strike capabilities and ballistic missiles. According to him in 1995, India and

¹²¹ Hagerty, Devin T. "Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis." *International Security* 20.3 (1995): 109.

Pakistan lack these capabilities and the deterrence is more rhetoric than fact.¹²² However Hagerty was writing more than 20 years ago and this has since changed, so that today both countries are perfectly capable of wreaking mass destruction on the other.¹²³ Deterrence, in whatever form it may take, is important to prevent war, but it does serve to increase tensions, lead to arms races, and increase the potential for a war to be devastating.

As mentioned earlier I believe the CWC is not unhelpful and in fact has been beneficial to promoting peace in South Asia, but only minimally so, and it has done next to nothing to prevent conflict. It only aids matters by providing for an assurance that the conflict would not include chemical weapons. To be fair, this is not a small feat and it is still a breakthrough. There have been several conflicts between Pakistan and India not just since the CWC, but also the development of nuclear weapons and the Non-Nuclear Aggression Agreement. The Kargil War occurred in Kashmir from May to July in 1999. Since then there have been several standoffs including 2001-2002, 2008, and 2016 and border incidents and skirmishes.¹²⁴ These not only present the threat of larger conflict, they mean despite, or because of, nuclear deterrence low level conflict seems destined to continue, with the potential for nuclear war. At least, thanks to the CWC, the threat of chemical warfare has been taken off the table.

There were concerns that Pakistan and India could engage in nuclear war despite the non-nuclear aggression agreement. Part of the problem was the potential lack of

¹²² *Ibid*, 98.

¹²³ Rajain, Arpit. *Nuclear Deterrence in Southern Asia: China, India and Pakistan*. SAGE Publications India, 2005.

¹²⁴ Sathasivam, Kanishkan. *Uneasy neighbors: India, Pakistan and US foreign policy*. Routledge, 2017, 2-16.

mutual assured destruction as tactical nuclear warfare was more likely. Nonetheless nuclear war would have been devastating and the threat for larger scale conventional war and nuclear war eventually helped persuade Pakistan to withdraw from the occupied Kargil heights during the Kashmir War in 1999.¹²⁵ Nuclear deterrence has helped prevent any outbreak of not only nuclear conflict but also higher level conventional conflict, between India and Pakistan.

D. Stability-Instability?

The case of India and Pakistan is often used as an example of the stability-instability paradox, where an increase in smaller conventional conflict occurring while the risk of nuclear war makes full-scale war unlikely.¹²⁶ According to Kapur nuclear danger facilitates conventional conflict, and I agree with this assessment, but it only facilitates small scale conflict, which can be devastating to local communities, but is not as effectual on the country as a whole.¹²⁷ Larger-scale conventional warfare, especially anything approaching full scale invasion by either side, would likely be met with nuclear weapons. Indeed, Pakistan has stated that it will use nuclear weapons if Pakistani conventional forces cannot repel an Indian invasion, a threat that is probable enough to make large scale conventional warfare highly unlikely.¹²⁸ But again this is not the case for small-scale conflict.

¹²⁵ Tellis, Ashley J., C. Christine Fair, and Jamison Jo Medby. *Limited conflicts under the nuclear umbrella: Indian and Pakistani lessons from the Kargil crisis*. Rand Corporation, 2002.

¹²⁶ Kapur, S. Paul. "India and Pakistan's Unstable Peace: Why Nuclear South Asia Is Not Like Cold War Europe." *International Security* 30.2 (2005): 147.

¹²⁷ *Ibid*, 150.

¹²⁸ *Ibid*, 130.

The stability-instability paradox may also apply to Russia and the United States. There is nowhere near the level of conflict as in the Indo-Pakistani case, a border conflict is highly improbable, as is a return to the level of conflict during the Cold War. However while war between the USA and Russia is highly improbable, largely due to the nuclear threat, proxy conflict is still likely, with some limited cases in Ukraine in Syria. Differences between Russia and the USA and India and Pakistan regarding nuclear arsenals and tensions, include that Russia and the USA have many more nuclear weapons and greater second strike capabilities with mutual assured destruction having been very much a part of the USA-Russia relationship for quite a while now. Any conventional conflict between the two has strong potential to lead to nuclear war and the stability-instability paradox functions very differently. Another difference of note is that the USA and Russia have an arms control agreement specifically regarding nuclear weapons and delivery mechanisms.

The stability-instability paradox may be lessened by arms control. First off the stability-instability paradox showcases, as does the security dilemma, why deterrence alone is not well suited to prevent war and decrease the level of conflicts worldwide. Deterrence can be useful in preventing war, but it is more positioned towards preventing war rather than creating and prolonging peace (positive vs. negative peace). So the question emerges: how to eliminate the smaller-scale conflicts caused by nuclear deterrence? Disarmament and arms control can be helpful in mitigating war's devastation, by banning certain weapons from use, and preferably from development and possession as well. Chemical weapons are a prime example of where disarmament can be

useful. But, whatever the benefits of the CWC, and a world without chemical weapons, it will do little to prevent hostilities from occurring in the first place. On the other hand, changes in the nuclear situation can have marked effects on conflict. The stability-instability paradox arises from the risk of nuclear war, so, if this risk is eliminated the conventional small-scale conflicts will be less probable, as it could very well escalate to full-scale conflict, which, while not as devastating as nuclear war, is still destructive enough to make peace far more preferable. Therefore, the risk of total devastation is lessened considerably. However, this also means that the probability of a ruinous, albeit conventional, war is increased, even if only slightly, and any such war will lead to the deaths of many innocent people.

Power asymmetries are also a concern; something that possession of nuclear weapons tends to decrease amongst nuclear powers.¹²⁹ This can lead to more aggression and a greater willingness to engage in conflict. Yet, conventional full-scale war is hardly a given, in a world without nuclear weapons most countries would still be reluctant to go to war. After all, World War II devastated Europe without the aid of nuclear weapons. But what nuclear deterrence does accomplish is to prevent tensions, and hostilities that arise from tension, whether it be small-scale border conflicts, proxy wars, or other anxiety filled events (such as the Cuban missile crises, which, to be fair, would not have happened without the existence of nuclear missiles) from boiling over into war. Conventional power can do a decent job of conflict prevention, but nuclear capabilities, such as those possessed by the USA and Russia, and by most other nuclear weapon

¹²⁹ Muller, Harald, and Carsten Rauch, eds. *Great Power Multilateralism and the Prevention of War: Debating a 21st Century Concert of Powers*. Routledge, 2017, part 15.

possessors nowadays, for second strikes and guaranteed destruction. This is particularly so when bolstered by a large number of nuclear weapons, like the arsenals possessed by the USA and Russia, assuring mutual assured destruction, and near guaranteeing that any tensions or low-level hostilities will not spiral into full-scale war in which there can be no victor. Deterrence does function in the core, but it pushes the conflict to the periphery. While beneficial for regional peace in the North Atlantic, the nuclear deterrent is detrimental to other regions and globally the cause of peace is not advanced.

Perhaps deterrence coupled with arms control is the best strategy for enhancing peace, but it extremely difficult to eliminate conflict through either alone. What can be eliminated is direct bilateral conflict between certain states (primarily nuclear-armed ones). Arms control can be prevent an arms race which would ratchet up tension. The spiral effect of the security dilemma can create conflict on the edges. By solving the security dilemma, arms control seeks to correct this dilemma and prevent the spiraling, thus, tackling any stability-instability paradoxes. Smaller level conflicts can be mitigated by disarmament directed against weapons that are particularly heinous and damaging to civilians (such as landmines). But, unfortunately for disarmament, besides from the difficulties involved in implementation, the causes of these conflicts, and the conflicts themselves, remain unsolved.

E. Non-State Actors

Another major gap in arms control, albeit one that is lessened by widely adopted and supported arms control agreements with decent arms control regimes, are non-state actors. Non-state actors have been a concern for quite some time in regards to arms

control and proliferation. In the wake of 9-11 there was substantial concern about potential terrorist use of chemical weapons, as they are relatively easy to develop, cause a great deal of panic, and are near certain to bring a large amount of attention to the group and their purported cause.¹³⁰ The CIA reported, in the early 2000s, that terrorist interest in WMDs was growing; confirmed by documents recovered from the Taliban and al-Qaeda.¹³¹ More recently ISIL has used chemical weapons, albeit in a very rudimentary way with chemical agents filled artillery shells.¹³² Possible insurgent use is also worrying (and terrorist and insurgent labels often overlap), and controlling any non-state actor's possession and use of chemical weapons via arms control regimes and treaties is difficult at best. The majority of the world's nations regard such actors as illegitimate and are not open to negotiate with them, and, in many cases, neither are the non-state actors. Many of these groups, especially those of a terrorist nature, are not constrained by the taboos surrounding WMD's and would be willing to use them if they possessed them.¹³³ The cases of ISIL, or of the cult movement Aum Shinrikyo, which perpetrated the 1995 Tokyo subway sarin attack (which also demonstrates the potential for non-state actors to possess such weapons), support this.¹³⁴

At first glance it may appear that arms control would have nothing to do with non-state actors. It is extremely improbable that non-state actors would join the CWC, or

¹³⁰ Tu, Anthony. *Chemical and Biological Weapons and Terrorism*. CRC Press, 2017, 7.

¹³¹ Bowman, Steve. "Weapons of mass destruction: The terrorist threat." LIBRARY OF CONGRESS WASHINGTON DC CONGRESSIONAL RESEARCH SERVICE, 2002.

¹³² Schmitt, Eric. "ISIS Used Chemical Arms at Least 52 Times in Syria and Iraq, Report Says" *New York Time*. Nov, 21, 2016. <https://www.nytimes.com/2016/11/21/world/middleeast/isis-chemical-weapons-syria-iraq-mosul.html>

¹³³ Brown, Fredric. *Chemical warfare: A study in restraints*. Routledge, 2017, xxxi.

¹³⁴ Okumura, Tetsu, et al. "Report on 640 victims of the Tokyo subway sarin attack." *Annals of emergency medicine* 28.2 (1996): 129-135.

give up landmine use by acceding to an international agreement. This does not preclude the possibility, which I think is real, if not likely, of an arms control agreement being reached between a state and a non-state actor (probably an insurgency that may look very much like a state). However, arms control regimes can be helpful in dealing with non-state actors. In the majority of circumstance these actors do not manufacture their own weapons, though there are very notable exceptions, such as IEDs and the potential of ISIL manufacturing chemical munitions, and rely on others to receive them. Attempts to control proliferation of AK-47s may be doomed to failure, but nuclear proliferation attempts have been fairly successful, and there have been success surrounding chemical weapons as well. Part of this success is predicated on the difficulty in developing such weaponry. There are significant obstacles to developing even a basic nuclear weapon and even states, such as Iraq have had major struggles when attempting to do so.¹³⁵ Nerve agents are not quite as difficult but still require an advanced enough laboratory that only a few non-state actors have ever had the capability. Mustard gas is much easier to manufacture, but it does require a significant amount of precursor chemicals.¹³⁶ Still, the potential exists for WMDs to be acquired by non-state actors and, in that instance, there is probably little that an arms control agreement can do to prevent use or lead to disarmament.¹³⁷

Despite the issues surrounding non-state actors, I do not see their potential possession of WMD's being of much increased concern as long as the world keeps

¹³⁵ Hamza, Khidhir, and David Albright. "Inside Saddam's secret nuclear program." *Bulletin of the Atomic Scientists* 54.5 (1998): 26-33.

¹³⁶ Tu, Anthony. *Chemical and Biological Weapons and Terrorism*. CRC Press, 2017, 14.

¹³⁷ Bowman, Steve. "Weapons of mass destruction: The terrorist threat." LIBRARY OF CONGRESS WASHINGTON DC CONGRESSIONAL RESEARCH SERVICE, 2002.

vigilant. In order to prevent possession arms control can have some influence and benefit. This can be done through international cooperation on anti-proliferation measures and military intervention to prevent the production and possession of such weapons. International arms regimes that support treaties, such as the OPCW and the CWC, help to confer a taboo on use and possession, which holds particularly true for non-state actors. These treaties, and the existence of such regimes, even if not embraced by the entire world, help to confer a norm that such weapons should not be in the possession of anyone save for states, and not even states in cases of disarmament. Thus, non-state actors can expect to be condemned. In the case of WMDs there will be more than just condemnations, and actions will, in all likelihood, be taken. I base this off of action being taken against non-state actors that have used chemical weapons in the past (whether the strength of such an action is based on power calculations and realpolitik or on perceptions of civilized standards is debatable), and the attempts amongst the members of the nuclear club for their club to limit proliferation as much as possible (including preventing Iraq and Syria from obtaining the atomic bomb and the current attempts to prevent Iran from doing the same thing).¹³⁸ In short the international community, particularly the most powerful nations, usually with no dissent between them, will act to prevent acquisitions of WMD's by non-state actors. This may constitute a looser definitions of arms control, one not centered on arms control treaties but stemming from non-proliferation agreements and enforcement, to military intervention aimed towards affecting disarmament. But more formal arms control regimes help to enforce the standards that

¹³⁸ Siracusa, Joseph M., and Aiden Warren. "The Nuclear Non-Proliferation Regime: An Historical Perspective." *Diplomacy & Statecraft* (2018): 23.

drive activity preventing WMD proliferation to non-state actors and codify in international norms the validity and necessity of such actions.

Prevention of proliferation surrounding states extends to non-states as well. This is effective for nuclear weapons given the difficulty in creating them and the extreme vigilance that the major powers keep to prevent proliferation. The CWC monitors the production and transfer of precursor chemicals for chemical weapons, allowing for international control over their distribution.¹³⁹ This is made simpler as the vast majority of the international community accedes to the CWC and seeks a world free of chemical weapons, meaning no state is interested in circumventing such controls. In the wake of the 9-11 attacks there were also ramped up security measures surrounding the private chemical industry. Thus, barring the collapse of a state possessing the proper resources and facilities (which has been an occurrence and worry), gaining even the precursor chemicals to develop chemical weapons remains difficult for non-state actors, and for many states.¹⁴⁰ However, current chemical weapons possessing states are capable of production entirely domestically. Weapons like landmines are also much easier to obtain than WMDs.¹⁴¹ As such; there are limitations with international non-proliferation controls. Given the increase in “new wars” and the growing importance of non-state actors, things are likely to change in the future. Non-state actors already have gotten their hands on and used chemical weapons. It just happens that a state (Syria) is the primary

¹³⁹ Carrera, Julie A., Andrew J. Castiglioni, and Peter M. Heine. "Chemical and Biological Contract Manufacturing Services: Potential Proliferation Concerns and Impacts on Strategic Trade Controls." *Strategic Trade Review* 3.4 (2017), 29.

¹⁴⁰ Tucker, Jonathan B., and Kathleen M. Vogel. "Preventing the proliferation of chemical and biological weapon materials and know-how." *The Nonproliferation Review* 7.1 (2000): 88-96.

¹⁴¹ The landmine can be replaced with Improvised Explosive Devices as well. Small arms are much more difficult to keep out of the hands of any non-state actors.

utilizer of chemical weapons right now. In order to tackle a world in which non-state actors play increasing roles in often multi-sided conflicts a new framework may well be needed. For now the state-based one can work, but this could all change.

F. Tensions and Conflicts

How does disarmament of certain weapons, like what the CWC seeks to do with chemical weapons globally, benefit peace? It is impossible to get rid of all weapons and even if WMDs are discarded alongside other conventional armaments that have been subject to attempted disarmament, such as landmines and cluster bombs, there are still plenty of weapons available to cause mass death and devastation, including, and especially, to civilians. Arms control and disarmament can be part of an effort to eventually achieve a world where there is no war, but there are much more immediate ways through which arms control can benefit peace.

Arms control is advantageous to peace and disarmament is particularly so. Preventing arms races, which successful arms control agreements do, inherently improves the chances for peace. However, arms control and even disarmament hardly ever prevent war and in fact in certain situations, where rising threats require a response that necessitates an arms buildup, may be dangerous. Yet, while arms control can reduce the risk of war it only does so in conjunction with other factors, particularly the geopolitical ones that cause wars. If one side wants war arms control is near useless in preventing it. But if both sides are antagonistic, but would prefer not to fight, then arms control decreases the chance of an escalation to dangerous extremes.

Military Intervention

Military force may be necessary in order to implement arms control and disarmament but then questions emerge regarding how this relates to the cause of peace. This fits into questions of humanitarian intervention and what this means for peace and war. The 1999 NATO military intervention halted mass atrocity in Kosovo.¹⁴² The threat of American airstrikes and military intervention in Syria in 2013 did accelerate diplomacy and helped convince Russia to step in and assist in brokering an agreement by which the Syrian Arab Republic would dismantle its chemical weapons stockpile and accede to the CWC.¹⁴³ Of course this was not quite the success that optimist made it out to be at the time and chemical weapons continued to be used afterwards. Relating to the chemical weapons taboo, chemical weapons are considered so heinous, so that their use induces a responsibility to protect, which often means military intervention justified with international law and norms.¹⁴⁴ However arms control via military intervention or at least military intervention in response to use or possession of certain arms deemed abhorrent, or the use of military force in an egregious manner, has a checkered history. This heavily suggests that ideals behind intervention have less to do with arms control, human rights, or humanitarianism than with politics and power. There was a significant, and decisive, NATO-led intervention in Libya in response to human rights abuses and attacks on civilians and armed intervention against Serbia in response to ethnic cleansing in

¹⁴² Solana, Javier. "NATO's Success in Kosovo." *Foreign Aff.* 78 (1999): 114.

¹⁴³ Blake, Jillian, and Aqsa Mahmud. "A Legal Red Line: Syria and the Use of Chemical Weapons in Civil Conflict." *UCLA L. Rev. Discourse* 61 (2013): 244.

¹⁴⁴ Weiss, Thomas G. *Humanitarian intervention*. John Wiley & Sons, 2016, 104.

Kosovo.¹⁴⁵ There was no issue regarding arms control in either of these cases, although there were previous concerns with chemical weapons in Libya that emerged during and after the Libyan Revolution. However, when Saddam Hussein used chemical weapons against Iranian troops during the Iran-Iraq war there was relatively little outcry and no threat of action from the West. There was a heavy amount of outcry regarding Syria, centered on use of chemical weapons, but although President Obama called for military intervention much of the United States' populace and congress, as well as many other Western state's populaces and parliaments, rejected such an intervention.

Military intervention when dealing with arms control matters is closely related to humanitarian intervention. Military intervention is more closely linked with disarmament as the attempt is often to prevent an entire type of weapon from being possessed by a certain party. There is often some degree of international cooperation surrounding these interventions, with coalitions going in to force disarmament. Military intervention has been used to prevent the possession of nuclear weapons in certain cases, with Israel bombing Iraqi and Syrian facilities that were directed to that purpose. And there has been talk of military intervention, unlikely in my opinion, to prevent Iran from developing nuclear weapons. If there were WMD's to be found, the invasion of Iraq would have certainly uncovered most of them and prevented any such weapons from falling in to the wrong hands. It is largely the threat of military intervention that functions as enforcement for arms control. Thus, for enforcement to have teeth, militarily powerful states must back the arms control regimes.

¹⁴⁵ Solana. "NATO's Success in Kosovo." (1999): 114.

Dealing with the outliers

When working towards global arms control there will be states that lag behind and those that appear unlikely to accede to any regime. In the case of the CWC Egypt and Israel are currently outliers but if one accedes the other might as well (although this not guaranteed). North Korea is one state that remains an obstacle to preventing chemical weapons prohibitions from becoming global and threatens to throw a wrench in any global arms control agreements. But if an arms control agreement were to be reached between The DPRK and other countries it will very likely decrease tensions and the chances for war. The DPRK also highlights the role that great powers play in effective arms control as well as maintaining peace through deterrence.¹⁴⁶ Japan and South Korea are under United States protection with all the military might of the most powerful state on Earth. This is as much a guard against the People's Republic of China, and formerly the USSR, as against the DPRK.

The DPRK must be dealt with somehow at some point, and there are no good options, but for the purposes of global arms control and disarmament, the DPRK can be partially ignored. For one the danger of proliferation from the DPRK is not that high thanks to anti-proliferation guards. The DPRK could drive an arms race with South Korea and Japan, but the United States military, and particularly its nuclear, umbrella helps to counter this, allowing both South Korea and Japan to swear off of nuclear and chemical

¹⁴⁶ Huntley, Wade L. "Rebels without a cause: North Korea, Iran and the NPT." *International Affairs* 82.4 (2006): 725.

weapons.¹⁴⁷ Because of this, the American military umbrella has been responsible for preventing further exacerbation of tensions in East Asia.¹⁴⁸ Of course geopolitically it must not be ignored and it must be included in global disarmament. But in seeking to bring about disarmament of chemical weapons, it is more vital to focus on achieving disarmament in the other states that still possess them, than to worry about the DPRK given how isolated internationally it is. It is the same with nuclear weapons; although the DPRK's nuclear program, and the continued existence of nuclear missiles, near guarantees that the United States will maintain a nuclear stockpile, thus ensuring that Russia does as well. But this is hypothetical. As far as preventing nuclear war *via arms control* it is more vital to work out agreements between the USA and Russia, India and Pakistan, and to prevent nuclear proliferation. Preventing war with the DPRK relies not on arms control, for it is improbable that the DPRK enters into an arms control agreement that other powers would trust it would follow, but instead on deterrence and diplomacy.

Peace and Preventing War

Arms control and disarmament can lessen the devastation of war by preventing certain weapons from being used and thus lessening casualties and destruction. This may work well for nuclear weapons, given their destructive power, but for chemical weapons and small arms the effects are less clear as if there is a war there are other methods to cause death and devastation. Still the hope is that the if the weapons that cause the most death and suffering, especially among civilians, are not used, or at least used more

¹⁴⁷ Hughes, Llewelyn. "Why Japan will not go nuclear (yet): international and domestic constraints on the nuclearization of Japan." *International Security* 31.4 (2007): 71.

¹⁴⁸ Kristensen, Hans M. "Japan under the US nuclear umbrella." *The Nautilus Institute* (1999), 6.

sparingly, then the overall death and suffering will decrease as a result. Supportive of this reasoning is the fact that certain weapons undergoing attempted arms control and disarmament, such as landmines and cluster munitions, tend to still cause death and injury to civilians even after fighting has ceased, as well as making certain areas no-go zones depriving populations of potential land to live on, farm, otherwise work, or transit through.¹⁴⁹ Where arms control and disarmament work the most towards peace, and a more active peace than just the mitigation of the destruction of war, is in the prevention of war itself. This ought to be done in conjunction with other matters but if arms control solves the security dilemma it also lessens tensions and prevents wars, especially low level and proxy conflicts, something that pure military deterrence has been unable to do (rather quite the opposite).

Work to tackle chemical weapons may be a success story, particularly in regards to the CWC, and yet there remain major problems. Under the direction of the CWC the number of chemical weapons in the world and chemical weapons possessors has decreased dramatically. However current events in Syria (2013 through 2018) remind the world that chemical weapons are still in existence and can be readily used despite international opposition. Syria did accede to the CWC after chemical attacks in 2013 and destroyed most of its chemical weapons stockpile.¹⁵⁰ However afterwards there were attacks by the Syrian government using chemical weapons, including toxic gas, likely

¹⁴⁹ Thakur, Ramesh, and William Maley. "The Ottawa convention on landmines: a landmark humanitarian treaty in arms control?." *Global Governance* 5.3 (1999): 275.

¹⁵⁰ Geis, Anna, and Gabi Schlag. "'The facts cannot be denied': legitimacy, war and the use of chemical weapons in Syria." *Global Discourse* 7.2-3 (2017): 1-4.

sarin. The response to one such attack was United States cruise missiles, showcasing that even with agreements military force may be necessary to enforce arms control.¹⁵¹

In the case of chemical weapons I think that arms control is beneficial to the world via working to mitigate war but that it does almost nothing to prevent conflict itself. While this is true for many arms control agreements, I think it especially pertinent for chemical weapons. The uniqueness of chemical weapons and the taboo that surrounds them means that their use is unlikely except in certain circumstances, but when they are used it is to horrific, if not always decisive, effect. They are completely indiscriminate, often following wind patterns, and are more likely than most other weapons to cause civilian deaths or can even turnaround on the side that deployed them. Thus chemical weapon disarmament can mitigate the effects of war. In no conflict has chemical weapons caused anything approaching a majority or plurality of deaths. But they still cause deaths, and oftentimes civilian deaths, some of which would be prevented if they were not in anyone's arsenals. There is another reason why chemical disarmament is important, if one type of weapon, a weapon of mass destruction none the less, is vanquished from the world, not because it has been technologically superseded, but because it is deemed against international norms, then this opens the door for other weapons, particularly those that are indiscriminate and the potential to cause heavy civilian casualties, to be banned and fade from the warzone.

There is an argument to be made that banning chemical weapons may just eliminate people from dying via one horrific form of death to dying via other means,

¹⁵¹ The Khan Shaykhun chemical attack in 2016 which the US government responded to by launching cruise missiles at Shayrat air force base.

conventional bombs for instance, which tend to be readily available. There is often not an area denial weapon that is as effective as chemical weapons (nuclear weapons perhaps but there are many other issues with using them) that can clear an area quickly and effectively, and also allows your own forces to occupy the area in short order. There is a reason the Assad regime continues to use them even after facing consequences and condemnation. Chemical weapons also impact life, not infrastructure. Other weapons allow for greater targeting and thus fewer civilian deaths. Thus I do believe that the prevention of chemical weapons use does save lives. The world ought to follow the creed that any amount of lives that can be saved, especially civilian lives, should be. Banning chemical weapons does this.

Even a completely successful CWC would do almost nothing to prevent conflict. This is also true for arms control regimes surrounding landmines, cluster munitions, and biological weapons, and almost any weapon where the hope for arms control has arisen. The exception is nuclear weapons due to their massive destructive capability and their position as the preeminent weapon in today's world. Nuclear weapons and related delivery and defense technologies cause tension that no other WMD or conventional weapon can (large collections of certain weapons come the closest and aircraft carriers are probably the nearest to a single weapon or weapon platform, that can cause considerable anxiety approaching, but not on the level of nuclear armaments). There is the case of World War II with its general, though not complete, restraint of the combat use of chemical weapons. This was a war that happened due to political reasons, expansionist and militaristic ideologies, and unsettled questions from World War I.

Chemical weapons had nothing to do with the outbreak of World War II. There was an arms race beforehand, but though this exacerbated tensions this was not the cause of the war, and the lack of an arms race (but with Germany still rearming) would not have prevented hostilities. The same is true of the Iran- Iraq War and the Syrian Civil War. There is absolutely no reason to expect that the a chemical weapons free world, or one free of landmines or cluster munitions for that matter, would prevent conflict. It is still worthwhile to pursue the eradication of these weapons, as this may not prevent war but will save some lives.

Arms control does help to stabilize military relationships between adversaries, but also amongst those states that are more ambivalent towards each other. In the early 90s Betts declares them vestiges of the Cold War as the “Russians are on our side now.”¹⁵² A noticeable flaw of this argument today is that the Russians are not on our side anymore. But the USA and Russia also signed arms control agreements in the early 90s with antagonism between them relatively non-existent, and this led to the deepest cuts ever in the number of nuclear weapons worldwide. The primary cause for this massive reduction of the nuclear threat was the loss in antagonism between the USA and Russia and that deterrence could still reasonably be maintained even with mass cuts in both states’ nuclear arsenals so there was little risk involved. Allies may need arms control less but it still has benefits. Nuclear arms control could help lead to disarmament and at least reduce the nuclear threat considerably more.

¹⁵² Betts, Richard K. "Systems for peace or causes of war? Collective security, arms control, and the new Europe." *International Security* 17.1 (1992): 7.

In the case of the USA and the USSR there was no direct conflict between the two superpowers nor amongst the USA and Russia and it is highly improbable that there will be in the foreseeable future. There are a multitude of factors explaining this, and I will not go into all of them, but what I want to ascertain is what role nuclear weapons played in this and what role that arms control surrounding nuclear armaments played in decreasing the likelihood of war. The United States and the USSR/ Russia may have not gone to war but they have supported opposing sides in other proxy conflicts and exacerbated these same conflicts. The Cold War was a bloody period and much of it was the fault of one or both of the two superpowers. In this way the stability-instability paradox certainly existed. Much blood and treasure was thrown in to smaller scale conflicts in order to combat the opposing side without direct war between the superpowers. I do think this lack of direct war was primarily due to nuclear deterrence. But this exacerbated tensions between the superpowers. Arms control can aid in mitigating this, although it cannot completely eliminate proxy conflicts.

Working towards a Global Reduction in Tension

There is no easy answer as to how arms control can, and should, function to prevent proxy conflicts. However I do believe that well designed and well implemented arms control may mitigate the risk of these conflicts occurring. For one proxy conflicts are driven largely by tensions and increased confrontation. Full-scale war between two powers would be too catastrophic so conflict moves elsewhere. Here deterrence works to prevent major war between two powers but is not helpful for increasing peace's reign worldwide. In some cases, such as the Cold War, deterrence might be useful, and even

beneficial, to peace in the end; however something ought to be done about the mass amount of death that is fed by tensions between two powers that cannot fight directly due to deterrence. Here arms control can be quite useful and potentially provides a solution, or at least a piece of it. Tensions are exacerbated by arms races and deterrence oftentimes leads to arms races as espoused by the security dilemma. History provides plenty of examples to support this, particularly the build up to World War I and World War II. It is important to note that there were other causes of these wars but the arms buildup increased tensions and helped to create a situation (particularly during WWI) where it would only require a spark to ignite the inferno. This was also the case with the Cold War although in this situation the resulting inferno would be so bad, as to be unwinnable, that both sides were careful to not let any sparks fly, one of the benefits of nuclear deterrence. However there are still issues here, as rather than causing World War III, tensions and attempt to gain power and limit the opposing state's power fed into many proxy wars, to continue with my analogy, the sparks flew towards the periphery and ignited or fed smaller infernos. The goal is to lessen tension to such a degree that sparks don't fly. It would be folly to say that arms control can reduce tensions to nothing but it will prevent tensions from rising and often even decreases them.

I propose that in much the same way that arms control can solve the security dilemma, it can also solve the stability-instability paradox. The instability and conflicts that occurs in the lower level and periphery largely arise from geopolitical tensions that occur. Arms races and uncertainty help feed these tensions. Arms control seems unable to remove the nuclear umbrella under which states might operate, and to lessen it to an

extent so that it might weaken the potential for aggressiveness at lower levels. But weakening the nuclear umbrella is dangerous as it increases the risk of war at the higher level. But arms control can decrease aggressiveness overall by eliminating an arms race and putting countries on a known, and guaranteed footing that is equal enough. A decrease in tension at the core increases stability all around, including the periphery, decreases involvement in proxy wars, and decreases global instability and the chance of war worldwide.

In order to make arms control work, and consequentially benefit peace, there must be widespread international agreement and acquiescence, particularly among the more powerful nations. Arms control only limits the weapons so there must still be deterrence to their use. If the deterrent is powerful enough, and not reliant on the weapon itself, and arms control successful enough disarmament may be a possibility. A combination of arms control and deterrence can lead to decreased tensions and thus decreased chances for war worldwide, solving the security dilemma and stability-instability paradox. For the USA and Russia regarding the START treaties and their nuclear arsenal the deterrent is their nuclear arsenals. Legitimacy is both a concern and a benefit regarding arms control and disarmament. States seek legitimacy and this won't change, what can change is increased legitimization of arms control agreements and of disarmament and the de-legitimization of the use and possession of certain weapons. Thus legitimization of arms control is important for it to truly have an impact. Countries are more likely to join an arms control regime and may even want to do so as it can confer certain benefits. And there is legitimacy in the perception of striving for peace after all. This sort of legitimacy

is particularly important for disarmament. Legitimacy of a disarmament regime also means that the international community (led by great powers) will be willing to intervene economically, and if necessarily militarily against regimes deemed de-legitimate by possession of taboo weapons. This is similar in arms control regimes; with the will to intervene against de-legitimate violators of the regime being, necessary to the regime's success, and reliant on the great powers.

Chapter Five: Findings and Lessons

A. Findings

The question this thesis tackles still looms large today: does arms control and disarmament limit aggression and benefit peace? Specifically, this thesis examines nuclear arms control and chemical weapons disarmament, and their relationship to peace. In seeking an answer, this study has produced three findings relating to the impact of arms control and disarmament upon global peace.

Arms Control and Disarmament are not Detrimental

Firstly, I find little evidence in the case studies that arms control is at all detrimental. There appears to be no case where mutually agreed upon arms control produces tension or is a contributing factor to war. I also find that voluntary disarmament, with the exception of nuclear disarmament, is never detrimental, though this should be qualified. Chemical weapons disarmament that has taken place thus far, and potential global disarmament these weapons, seems to have no negative effects. In fact it appears to be beneficial, reducing tensions and eliminating hideous forms of killing, and saving at least a few lives. The worst that the chemical weapons taboo, and the disarmament regime, has done is muddied potential intervention in Syria. But this would have been avoided if disarmament had been observed earlier. Disarmament could remove a deterrent and invite invasion, Qaddafi gave up Libya's chemical and nuclear programs only to be overthrown and killed, partially due to NATO intervention. But Saddam Hussein was strongly suspected of having weapons of mass destruction and he was

overthrown by an invasion largely on that premise. Thus there is the potential for disarmament to invite war, but I believe this is unclear, not disarming can be a *cause belle*, save for the case of nuclear weapons. Nuclear arms control agreements have not appeared to harm peace in any way. However, there may be potential detriments with the case of nuclear disarmament; given the potential importance of mutual assured destruction and the nuclear deterrent in preventing war between the USSR and the USA. The nuclear deterrent is also a good method to prevent invasion which is what the DPRK and Iran are both well aware of. But global nuclear disarmament is extremely unlikely in the near future, being a suggestion that exists more on the fringe, leaving its potential effects to continued speculation. I want to once again emphasize the unique nature of nuclear weapons as the only weapon that would, if it alone disappeared, have a significant impact on the state of war, peace, and stability and not for the better. Nuclear disarmament does, unlike other sorts of disarmament, indisputably invite war.

Arms Control and Disarmament can Mitigate Conflict

Secondly, I find that, theoretically, arms control can indeed lessen the effects of war. I observe the same with disarmament, save for the major exception of nuclear disarmament, I believe that nuclear disarmament may lead to a more dangerous world and one with more conflict (due to the removal of the nuclear deterrent), though this is not certain. Perhaps nuclear disarmament may be beneficial, but it is a precarious matter. My findings on the matter are inconclusive, but I believe there is enough of a risk and a quite a large one at that, attached to nuclear disarmament in the present world. With chemical weapons, however, I ascertain that disarmament is beneficial. Chemical

weapons cannot be used where they may have otherwise been without disarmament. Thus, conflicts can be mitigated. There is also no chance for increased retaliation if chemical weapons are not in play. I do not attempt to estimate how many lives could be saved if chemical weapon disarmament becomes a global reality (such a calculation would be fraught with potential error anyhow and highly speculative). But I am certain that it is considerable enough to justify pouring resources into destroying all chemical weapons. I am also fairly certain that, by destroying 97% of the world's chemical weapons, the CWC has saved lives.

Arms Control and Disarmament can Prevent War

Thirdly, this study finds that arms control and disarmament can benefit peace by preventing war, but they cannot do so alone. Disarmament and arms control of non-nuclear weapons, can theoretically prevent war, or at least decrease the chance of it occurring. This occurs due to arms control solving the security dilemma producing a downgrade in tensions, and this downgrade leads to lessened chances of inter-state hostilities. This includes the case study of chemical weapons. However, I also find that chemical weapons disarmament does almost nothing to prevent conflict from occurring and there are no examples that I encountered supporting the opposite conclusion. Rather, there are many examples to support chemical weapons disarmament, or even chemical weapons themselves, having no, or at best, very little, effect on whether a conflict breaks out or not. Disarmament may reduce tensions, largely due to the chemical weapons taboo and the international community's stance against them. Tensions increase when a state maintains a chemical weapon stockpile, but they become particularly tense if they are

used nowadays (it is fair to question how true this was, say during the Iran-Iraq War, and it is fair to question how far it goes today). Chemical weapons disarmament is now the international norm, which is a welcome development. Thus disarmament decreases tensions and thus the likelihood for war.

This has been supported by events in Syria where the West, particularly the United States, threatened to intervene in 2013 against the Assad regime in response to chemical attacks. Russia helped to mediate a solution where the Syrian Arab Republic would disarm, destroying its entire declared chemical stockpile and as this is part of the reason the West did not intervene against Assad (domestic pressure and events in Syria themselves cannot be ignored though, but the disarmament allowed a reasonable backtrack from threats and tensions). Of course the Syrian Government still possesses chemical weapons, and has used them since then. But, when, in 2017, they attacked the town of Khan Shaykhun in the deadliest chemical attack since 2013, the United States responded with cruise missile strikes against the Syrian government's Shayrat Air Base. Full, actual, disarmament would have meant that the Assad government would not have been attacked by the USA in this case. This can also be understood as being supportive of disarmament mitigating conflict, as international involvement, based on chemical weapons, would never have occurred. At the same time, the Syrian Civil War did not break out because of chemical weapons and the foreign intervention has, for the most part, predicated on other matters.

Nuclear arms control was, and is, beneficial for peace between the United States and the USSR, and later Russia. In this case, arms control operates alongside nuclear

deterrence. This deterrence is maintained via mutual assured destruction, making war between the two powers highly improbable. However this allows for increases in tensions, which can risk inflaming conflict in the periphery. Nuclear arms control has not threatened nuclear deterrence. Rather it has helped to assure mutual assured destruction, and thus peace between the USA and USSR/Russia, as neither state will be inclined to be overly aggressive. This is also so with India and Pakistan. Assuring mutual assured destruction is particularly pertinent in the Anti-Ballistic Missile Treaty and the New START. Tensions have also been decreased, and an arms race been prevented, reductions in stockpiles and limits on the quantity of nuclear weapons and delivery mechanisms. Nuclear arms control is also beneficial for world peace. It theoretically solves the stability-instability paradox, and nuclear umbrellas can extend far. Its effect on peripheral conflict is less clear in the real world. There are many other sources of tension beyond nuclear weapons, and arms control cannot prevent small conflicts on its own. But nuclear arms control can tame the tensions that do arise from nuclear arsenals, and add in a measure of stability beyond nuclear powers and their respective umbrellas.

I mention the unique nature of chemical and nuclear weapons, and this thesis is really discussing arms control and disarmament for these two Weapons of Mass Destruction. Especially with nuclear weapons an issue of transferability arises due to their distinct capabilities. Still, some of the conclusions I reach can be reasonably transferred to the other Weapon of Mass Destruction: biological weapons. Biological weapons disarmament closely follows chemical weapons disarmament. There is also a biological weapons taboo, and the Biological Weapons Convention, which bans

biological weapons, has been ratified by most countries in the world. I do believe that there are lessons in chemical and nuclear weapons that can transfer to conventional weapons particularly landmines and cluster munitions, which are indiscriminate and have a tendency to kill civilians, and also have their own treaties that attempt at disarmament. Disarmament, or even arms control that lessens the number of certain weapons used in hostilities, can thus reduce the number of casualties, particularly of civilians, in war.

I can say that arms control and disarmament does benefit peace via mitigating war and lessening aggression. However I also find that the extent to which they do is limited, and they still allow much death and destruction. But it is still worthwhile for it does decrease this death and destruction. However, most disarmament regimes, including chemical weapons disarmament, do little to prevent conflict from occurring in the first place, even if they save some innocent lives. Arms control, on the other hand, does more to prevent conflict as it eliminates the tensions of arms races, which can tip over into conflict. I do find that nuclear arms control, in particular, helps to prevent conflict and decrease tensions, and is one of the most important efforts, given the threat of nuclear war.

B. Future of Arms Control and Disarmament

The success of the Chemical Weapons Convention and the OPCW regime, and thus the prevention of the use of chemical weapons, and the chances for their complete removal from the world, is debatable but there have been quite a few successes. Indeed, I believe that the CWC has been quite successful and is one of the most successful disarmament/ arms control treaties. It has eliminated most of the world's chemical

weapons and only a few countries resist. The chances for complete chemical weapons disarmament are surprisingly good, and realistic enough that they may even happen in our lifetime. It would be foolhardy to hold our breath on it but there is certainly a realistic shot. On the other hand there is also the realistic chance that the current outliers from the CWC continue to be outliers for a few decades more. On a good note, I do not foresee the CWC crumbling in the future.

I was not able to examine some of the events that occurred in 2018 in depth in the paper. Nonetheless they do have significant consequences. The Douma chemical attack of April 7, 2018 proved, once again, that chemical weapons do have substantial military value in certain conflicts. Any UN response was blocked as Russia and the United States continued to attack each other diplomatically and tensions were dramatically increased with condemnations and thinly veiled threats of military action between the two powers. Tensions were only increased as the USA and its allies considered a military response against Syria and then launched strikes against government facilities on April 14, 2018. Again, it is not hard to imagine that tensions between the USA and Russia would not be so open and so heightened, if Syria did not possess any chemical weapons. The joint American, British, and French strikes were directly due to the Douma chemical attack. I believe this helps reinforce the norm against chemical weapons. Though it is unlikely to dissuade Syria from launching any more chemical attacks it does send a message to the international community that these weapons are reprehensible enough to warrant military action if they are used. This reinforces the narrative of chemical weapons as illegitimate.

There is also reason for optimism about nuclear arms control. The number of nuclear weapons has been reduced since the Cold War by an astounding amount. Nuclear arms control has also guaranteed that neither Russia nor the USA have a clear advantage over the other and assures peace via deterrence and mutual assured destruction. At the same time it works to lower tensions, decreasing the chance of proxy conflicts. The tensions between the United States and Russia nowadays have little to do with nuclear weapons and there is no nuclear arms race anymore. I am optimistic that arms control efforts can continue to further reduce the number of weapons that both states have. However I do not predict much of a chance of a nuclear free-world anytime in the near future.

Both New START and the CWC can be said to be fairly effective, but not completely so. If the goal is the lowering of stockpiles and lessening the chances of use there are definite successes. But there also failures if the goal is the complete elimination of the use of the corresponding weapons and the absolute destruction of the stockpiles. For New START the stockpiles between two countries have been reduced. This has likely led to a decrease in chances of nuclear war and a decrease in tensions by rolling back an arms race. However, it is more so Mutual Assured Destruction that has prevented any war from occurring. It should be stated the Mutual Assured Destruction also led to START and treaties like it.

I do not believe that we can ever make arms control and disarmament alone be salve for peace. I do not think we shall ever do away with war as long as humanity still exists. The causes can never be addressed by arms control alone. Thus, without a

fundamental change in the human relations, arms control and disarmament can never be the unqualified bringer of peace. Global peace and successful nuclear disarmament can only be achieved alongside each other via the reworking of the state from the inside into part of a global utopian vision.

To conclude, the prospects for arm control and disarmament are both strong yet weak. Arms control and disarmament can save a few lives, and perhaps many more. Nuclear arms control has the potential to decrease the chances of conflict. Indeed, arms control all around does limit one source of tension. But nuclear arms control is exceptional. If done properly, nuclear arms control, in concurrence with nuclear deterrence, and alongside diplomatic and economic progress, lessens war in the nuclear core and the periphery. This can eventually lead to actual nuclear disarmament, thus, eliminating the threat of nuclear apocalypse and the potential for resultant human extinction. But, in order for peace to truly reign, and for war to become an exceptional phenomenon, ushering in a new stage of history, there must be substantial geopolitical work independent of arms control. However, arms control can play a role, though not the most major role, in this. I do believe that arms control and disarmament can help make this a more civilized kinder world and can help build up to a world dominated by peace. Arms control and disarmament will, in all likelihood, expand in the near future. Yet, arms control must work in conjunction with other measures. Nonetheless, it is an integral part of building a more peaceful world.

Appendices and Figures

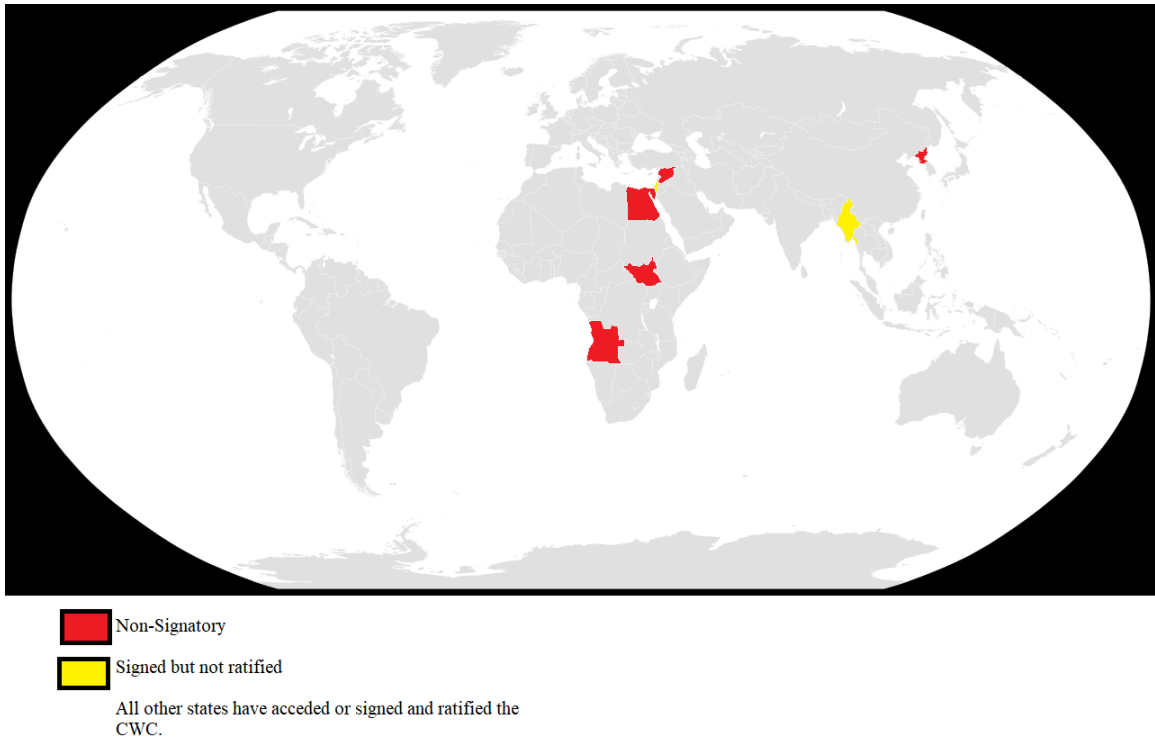


Figure 1 -A map showing the status of the CWC in 2013. Since then Myanmar and Angola have signed and ratified and so has Syria. Israel has signed but not ratified as it is today. Thus we can see some slight progress even for the CWC even if Syria is a failure as of now.¹⁵³

¹⁵³ Image created by Milo Ventura using the BlankMap-World6.svg template (in the public domain) retrieved from Wikimedia Commons.

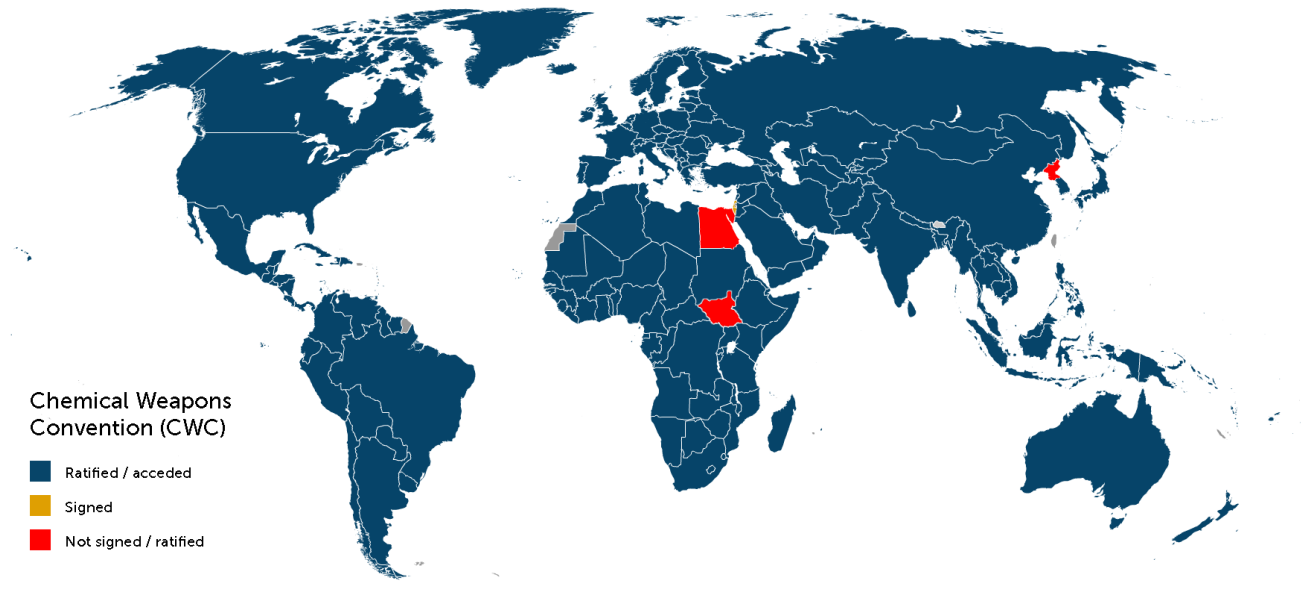


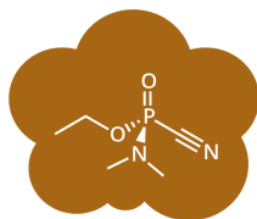
Figure 2- An up to date map as of April 2018 showing the status of the CWC. South Sudan has stated its intent to accede. Syria has acceded but it has still used chemical weapons in direct violation of the CWC. There is little reason to believe this map will change much in the future, asides from South Sudan. ¹⁵⁴

¹⁵⁴ INTERNATIONAL LAW AND POLICY INSTITUTE “Chemical Weapons Convention” *Weapons of Mass Destruction Project-ILPI*. 2016.

CHEMICAL WARFARE NERVE AGENTS

PART ONE: THE G SERIES

THE G SERIES NERVE AGENTS ARE SO NAMED BECAUSE THEY WERE ALL FIRST SYNTHESISED IN GERMANY. THEY ARE ALL EXTREMELY TOXIC VOLATILE LIQUIDS, CLASSIFIED AS WEAPONS OF MASS DESTRUCTION BY THE U.N., AND THEIR PRODUCTION & STOCKPILING IS OUTLAWED.



TABUN (GA)

(ethyl dimethylphosphoramidocyanidate)

SMELL & APPEARANCE

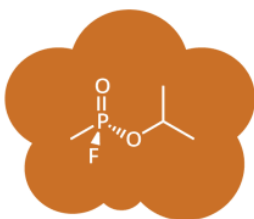
Clear, colourless liquid, though impure tabun can have a brown appearance. Pure tabun is odourless, but it often has a faint fruity odour due to impurities.

SYNTHESISED

1936 Discovered accidentally by Gebhardt Schrader, a German chemist who was investigating organophosphates as pesticides.

LETHALITY

median lethal concentration	median lethal dose
400	4000
milligram-minutes per cubic metre	milligrams per person (skin exposure)



SARIN (GB)

(isopropyl methylphosphonofluoridate)

SMELL & APPEARANCE

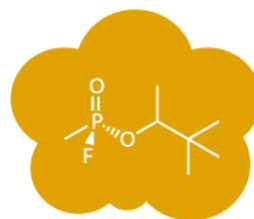
A clear, colourless liquid, tasteless and odourless in its pure form. It's a volatile liquid, like other nerve gases the vapour generated is heavier than air.

SYNTHESISED

1938 Named after the team of scientists behind its initial discovery: Schrader, Ambros, Ritter & Van der Linde

LETHALITY

median lethal concentration	median lethal dose
100	1700
milligram-minutes per cubic metre	milligrams per person (skin exposure)



SOMAN (GD)

(3,3-dimethylbutan-2-yl methylphosphonofluoridate)

SMELL & APPEARANCE

Soman is a clear, colourless, tasteless liquid. Its odour is faint when pure, but when impure it has a yellow-brown colour and has a strong, camphorous odour.

SYNTHESISED

1944 Discovered during research into the pharmacology of tabun & sarin funded by the German army.

LETHALITY

median lethal concentration	median lethal dose
70	300
milligram-minutes per cubic metre	milligrams per person (skin exposure)



CYCLOSARIN (GF)

(cyclohexyl methylphosphonofluoridate)

SMELL & APPEARANCE

Clear, colourless liquid with a sweet, musty smell, sometimes likened to peaches. It evaporates around 70 times slower than sarin, and is also flammable.

SYNTHESISED

1949 Also a result of German research, Iraq is the only country known to have manufactured significant quantities.

LETHALITY

median lethal concentration	median lethal dose
50	350
milligram-minutes per cubic metre	milligrams per person (skin exposure)

EFFECTS OF NERVE AGENTS



Inhibit breakdown of acetylcholine



Cause contraction of the pupils



Excessive mucus, tears, saliva & sweat



Nausea, gastrointestinal pain & vomiting



Bronchoconstriction & chest tightness



Spasms, convulsions & loss of bowel control



Coma & eventual death



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Figure 3—An infographic of the G-series of nerve agents¹⁵⁵

¹⁵⁵ Compound Interest, "Chemical Warfare & Nerve Agents – Part I: The G Series" *Compound Interest*. Oct. 7, 2014.

2017 Estimated Global Nuclear Warhead Inventories

The world's nuclear-armed states possess a combined total of roughly 15,000 nuclear warheads; more than 90 percent belong to Russia and the United States. Approximately 9,600 warheads are in military service, with the rest awaiting dismantlement.



Sources: Hans M. Kristensen and Robert S. Norris; U.S. Department of State. Updated January 2, 2018.

Arms Control Association

Figure 4 - Estimated nuclear warhead inventory, notice the United States and Russia dominate and the large number of retired weapons, as well as stockpiled vs deployed weapons¹⁵⁶

¹⁵⁶ Arms Control Association, "2017 Estimated Global Nuclear Warhead Inventories" *Arms Control Association*. March, 2018.

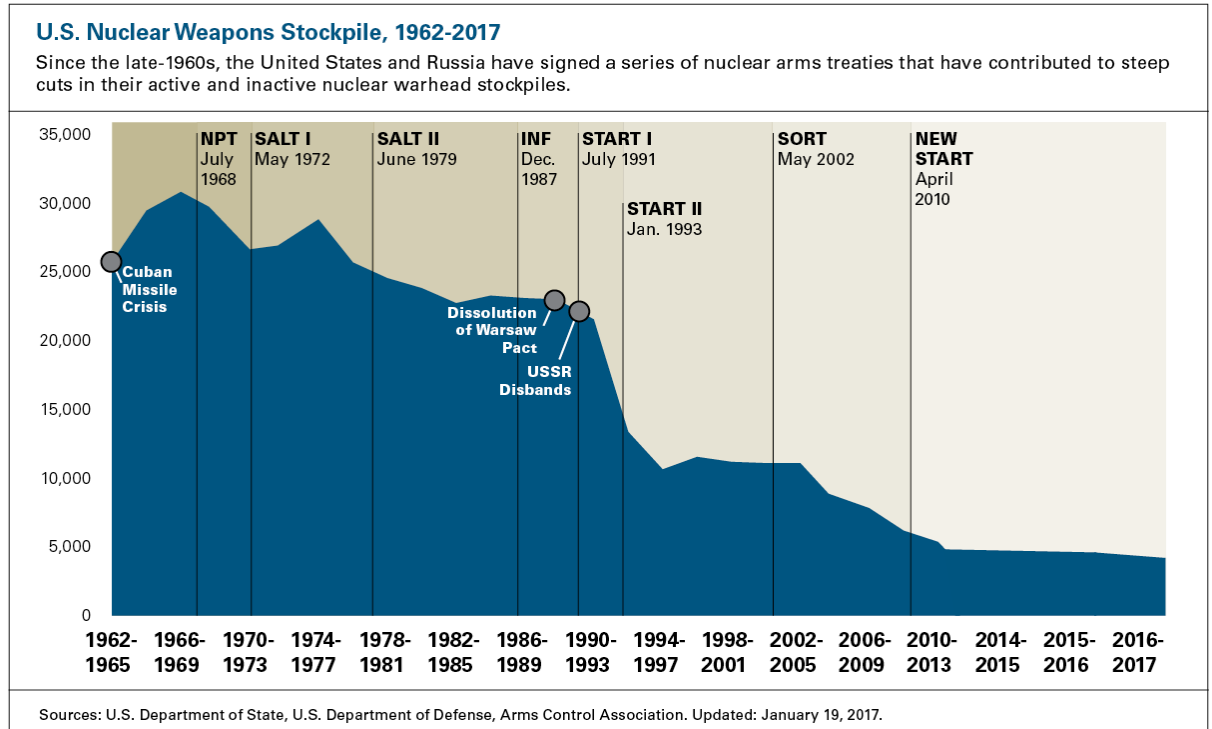


Figure 5 - A graph of the number of nuclear weapons in the arsenal of the United States since 1962 with arms control agreements marked. Note the decline under the START agreements and the comparatively smaller decline under new START.¹⁵⁷

	Land-Leg		Sea-Leg		Air-Leg	Total	Attributed Warheads	
	Launchers	ICBMs	Launchers	SLBMs	Launchers	Launchers		Missiles
Deployed	449	449	239	239	118	806	688	1722
Non-deployed	57	263	97	180	23	177	443	
Total	506	712	336	419	141	983	1131	

Figure 6 - A table showing official numbers for the launchers, which include bombers and missiles (which may include multiple warheads) more than a year after it entered into force. The numbers are derived from a survey from the Federation of American Scientist claimed that this was evidence that the US military was in no rush to meet the limits set by the treaty and was not invested enough in arms control.¹⁵⁸

¹⁵⁷ Arms Control Association, "U.S. Nuclear Weapons Stockpile, 1962-2017" *Arms Control Association*. March, 2018.

¹⁵⁸ Table created by Milo Ventura using data from Federation of American Scientists, "US Strategic Nuclear Triad Counted under New START Treaty" *Federation of American Scientists*. Jun. 1, 2014.

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