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The Non-Proliferation Treaty and the Political Aspects of Nuclear Power in a Modern Context

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School for International Training (SIT)

Independent Research Project

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Abstract

The Nuclear Non-Proliferation Treaty was created in 1967 in response to the growing threat of nuclear weapon detonation. Today, it has been signed and ratified by 190 countries who pledge to pursue efforts towards non-proliferation, peaceful nuclear energy, and nuclear disarmament. Five states remain outside of the treaty, four of which are nuclear weapon states: Israel, Pakistan, India, and North Korea. The nuclear weapon states in the NPT have been established as Britain, France, the U.S., Russia, and China.

The NPT has been created and maintained through the existence of power dynamics between nuclear and non-nuclear states. The potential to use nuclear weapons in warfare, a fearful conception that induced this treaty, has since become unrealistic. Yet nuclear weapons continue to remain a source of political and diplomatic power for the five nuclear weapon states whose authority has been validated through the treaty. The perception of nuclear weapons as a manifestation of state power has enabled their persistence in a world of evolving approaches to conflict that render their use as an offensive and defensive strategy to be superseded by advanced forms of warfare.

This paper looks at the NPT in the context of the evolving global security dynamic, and analyzes how the importance of nuclear weapons has shifted from a defense strategy to a powerful symbol of political authority. Reports and publications from the ICRC and the Geneva Call support arguments of recent developments and challenges in defending against modern forms of conflict. The work of nuclear deterrence theorists such as Waltz, Brodie, and Glaser will contribute to elucidating the diminishing

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2 Kenneth N. Waltz, "Nuclear Myths and Political Realities," The American Political Science Review 84, no. 3 (September 1990), page 732
effect of nuclear weapons on deterrence and the impracticality of nuclear weapons in warfare. An analysis of historical events and proceedings will demonstrate the changing role of nuclear weapons and nuclear weapon states in a globalized world dependent on interstate cooperation.

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I. Introduction

Using nuclear weapons as a warfare strategy has become largely obsolete since the end of the Cold War. While the sheer destructive power of nuclear detonation is widely understood, the possession of nuclear weapons still remains a global phenomenon. The persisting importance of nuclear weapons lies in the political undertones they have developed in the years leading up to the current global security environment. The Non-Proliferation Treaty has been an indispensible aspect of facilitating this change in nuclear perceptions. The NPT is constructed to address and manage non-proliferation, peaceful nuclear energy, and disarmament in the context of both nuclear and non-nuclear membership. Empirical knowledge on NPT compliance incentives defend, justify, and reinforce the existence of a multilateral power dynamic that values nuclear possession.\(^3\)

The evolving nature of conflict and interstate relations during and since the end of the Cold War helps to elucidate how the power of nuclear states in the NPT has shifted in the face of current global security challenges. The question of whether the NPT successfully encourages disarmament or whether its perpetuation of the status quo counteracts incentives for disarmament is explored in relation to modern dynamics and conceptions of political power.

II. The Evolving Purpose of Nuclear Weapons: A Historical and Contemporary Comparative Analysis

The natural progression of and developments in warfare tactics create a constant evolution of technological innovation, attitudes toward conflict, and strategies toward

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\(^3\) Daniel Verdier, "Multilateralism, Bilateralism, and Exclusion in the Non-Proliferation Regime," *International Organization* 62, no. 3 (Summer 2008), page 442
deterrence. With the introduction of nuclear weapons, interstate conflict came to revolve around defensive rather than offensive strategies to protect and preserve domestic security through deterrence. Deterrence theorist Bernard Brodie noted that “the effects of nuclear weapons derive not from any particular design for their employment of war but simply by their presence.”

The contemporary significance of nuclear weapons has become largely psychological; they have come to symbolize alliances and group security in an integrated global community with codified multilateral agreements. As Glaser claims, the improving relation between nuclear powers has initiated a change in the role of nuclear weapons. They provide a political blanket and the promise of security at a nearly theoretical level, as the practicality of their deployment in military exploits has diminished significantly since the Cold War. Although the potential for war still remains, “nuclear weapons have drastically reduced the probability of its being fought by the states that have them.”

In the face of changing global security challenges and innovations in warfare strategies, nuclear weapons have developed into a political tool for interstate diplomacy and cohesion, largely losing any genuine deterrent potential.

2.1 Historical: Defense and Deterrence in the Cold War Era

The U.S., having detonated the first nuclear weapon on Hiroshima and Nagasaki in 1945, posed a threat of military and political superiority for the Soviet Union. For a span of over 40 years, the Eastern and Western superpowers competed for the power of deterrence through nuclear development programs as a national security strategy, forming

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4 Bernard Brodie, War and Politics (New York, USA: Macmillan, 1973), page 412
6 Waltz, "Nuclear Myths..." page 744
an era of political and military tension.\(^7\) A critical aspect of the Cold War, the U.S. and the Soviet Union multiplied their nuclear weapon arsenals far beyond the requirements of deterrence—“each has obsessively measured its strategic forces against the other’s. The arms competition between them has arisen from failure to appreciate the implications of nuclear weapons for military strategy and, no doubt, from internal military and political pressures in both countries.”\(^8\)

As a new form of warfare, the deterrent effect of nuclear weapons during the Cold War is thought to have prevented physical conflict through defending domestic and allied security. The Soviet Union’s potential for attacking Western Europe was hampered by the threat of an irreversibly destructive weapon capable of annihilating large proportions of Russian society and infrastructure.\(^9\) As proposed by Waltz, “several hundred warheads could destroy either the United States or the Soviet Union as ongoing societies.”\(^10\) Failing to recognize the absurdity of nuclear weapons as a military strategy, both the U.S. and the Soviet Union multiplied their nuclear stockpile excessively beyond reason on the principle of parading their military and economic capabilities. Continuous proliferation was driven by internal military and political pressure as a means to announce international superiority and rally nationalist fervor.\(^11\)

A way to confer prestige, the countries invested heavily in nuclear weapon research and development that contributed to the promise of security for NATO and

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\(^8\) Waltz, "Nuclear Myths..." page 741

\(^9\) Glaser, "The Flawed..." page 118

\(^10\) Waltz, "Nuclear Myths..." page 735

\(^11\) Waltz, "Nuclear Myths..." 741
Eastern Bloc countries respectively in the face of conflict. After the Cold War, a majority of Eastern Bloc countries ratified the NPT—almost all between 1992 and 1995. Before the creation of this treaty in 1968, nuclear weapons were seen as imperative for the preservation of domestic security. Once the Soviet Union and the U.S. developed nuclear weapons in the 1940s, soon after followed Britain in 1940, France in 1945, and India in 1967. During this time, the possession of these weapons conferred global supremacy by asserting formidable military resources to deter outside aggression. Nuclear weapons in their debut as a warfare tactic conveyed a deterrent effect and were developed on the basis of military predominance.

2.2 Contemporary: Political and Diplomatic Resource in a Global Context

Nuclear weapons now largely serve as a security assurance for nuclear states and their allies in addition to a source of diplomatic power. Widespread declines in isolationist domestic policies has prompted an increasing movement toward global governance and multilateral cooperation. This trend has precipitated the importance of global security consistencies and power dynamics such that nuclear weapons have begun to shift further from a military deterrent toward a source of political leverage in bilateral and multilateral negotiations. As their deterrent value decreases, they remain to “provide an insurance against an unforeseeable deterioration of relations.” In a nuclear world, peace is maintained by strategic arms agreements with economic and political

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13 Verdier, "Multilateralism, Bilateralism..." page 443
15 Christopher Way and Karthika Sasikumar, "Why and When Do Countries Sign the NPT?," Columbia International Affairs Online.
16 Glaser, "The Flawed..." page 124
significance, not necessarily military assurances—these agreements “can benefit countries economically and help to improve their relations.”

The NPT qualifies a nuclear weapon state as having detonated a nuclear weapon before January 1st 1967. While France and Britain possess small stockpiles of nuclear weapons, it is notably the U.S. that uses nuclear power as a political tool. Multiple NATO states, including Turkey, Italy, Germany, and Belgium, have requested the presence of U.S. nuclear weapons on domestic soil. Official NATO doctrine states that nuclear weapons, to this day, remain essential in preserving peace. Japan also continues to rely on the U.S. nuclear deterrent to uphold peace and protect its territory, as noted in the Japanese government’s official “Defense Program Outline.” Nuclear weapons on foreign soil serve as a statement of U.S. alliances to convey comparable security capabilities, rather than genuine threats of detonation.

The existence of nuclear weapons has prompted a system of comprehensive international monitoring and control under the NPT and IAEA. The presence of nuclear and non-nuclear states in the NPT requires precautionary monitoring and intervention in domestic nuclear energy programs. These safeguards seek to prevent nuclear weapon production during the course of peaceful civilian nuclear energy creation. This system has brought nuclear and non-nuclear countries together in a joint effort to pursue nuclear energy and protect against proliferation. The monitoring of nuclear energy through a multilateral framework reflects the changing context of the nuclear field.

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17 Waltz, "Nuclear Myths..." 741
18 Borrie, interview by the author.
20 Scott Sagan et al., "Are the Requirements for Extended Deterrence Changing?," Carnegie Endowment for International Peace, last modified April 6, 2009
21 Amory Lovins, Energy/War, Breaking the Nuclear Link (Friends of the Earth, 1980)
The possession of nuclear weapons, or alliance with nuclear weapon states, opens the door to nuclear fuel, equipment and technology, and research intelligence. Signatories to the NPT are much more likely to be exempt from export controls on duel-use technology by having signaled their peaceful intentions.\textsuperscript{22} First indicated in the 1970s, South Korea began to pursue a nuclear weapons program upon the perception of a weakening U.S. commitment to South Korean defense. In 1975, the U.S. blocked South Korea from purchasing a reprocessing facility from France that could be used to create nuclear weapons by threatening to terminate South Korean fuel and equipment export for a U.S. nuclear reactor, rescinding military aid, and maintaining military presence. Additionally, the U.S. coerced Canada into suspending its reactor deal with South Korea unless the reprocessing plant was terminated.\textsuperscript{23} Under significant U.S. pressure, South Korea abandoned its nuclear weapons program and signed the NPT in April of 1975.\textsuperscript{24} This demonstrates how a nuclear weapon state can profit economically and diplomatically by imposing their authority to create costs and benefits for other states.

In the long and complicated history of North Korea as a nuclear state, the U.S. has pursued nuclear power as an instrument of control and manipulation over North Korean nuclear activities. While North Korea used nuclear weapons as a military threat, the U.S. responded not through paralleled nuclear development, but with systematic power initiatives.\textsuperscript{25} In 1994, before North Korea had retracted its NPT membership, the U.S. promised improved economic and diplomatic relations and Light Water Reactor

\textsuperscript{22} Way and Sasikumar, "Why and When...," Columbia International Affairs Online.
\textsuperscript{23} Daniel W. Drezner, \textit{The Sanctions Paradox: Economic Statecraft and International Relations} (New York: Cambridge University Press, 1999), page 302
\textsuperscript{25} Davenport, "Chronology of U.S.-North," Arms Control Association
assistance under the condition that North Korea consent to a three-stage process of eliminating a nuclear weapons program.\textsuperscript{26} In 1996, the U.S. imposed sanctions on North Korea to inhibit imports or exports of missile-technology related transfers, exhibiting their ability to manipulate the nuclear power of states outside the legitimate NPT regime.

\textbf{III. The Non-Proliferation Treaty and Internal Power Dynamics}

The NPT was developed in the wake of the Cold War to manage the growing threat of nuclear weapons as a military strategy. The indiscriminate nature of nuclear weapon detonation drove countries to create a multilateral agreement that would protect against continuous proliferation and make headway toward disarmament. The treaty establishes nuclear and non-nuclear states through article IX that qualifies a nuclear state as “one which has manufactured and exploded a nuclear weapon prior to January 1\textsuperscript{st} 1967.”\textsuperscript{27} Analysis of the NPT has shown how independent bilateral negotiations and agreements can incentivize compliance and membership through legitimacy, domestic security, access to peaceful nuclear resources, and economic and diplomatic benefits.\textsuperscript{28}

\textbf{3.1 The Three Pillars}

The first pillar of the NPT is non-proliferation. Nuclear weapon states, hereby referred to as NWS, are prohibited from transferring nuclear weapons to any other member, and may in no way “assist, encourage, or induce any non-nuclear state to manufacture or acquire nuclear weapons.”\textsuperscript{29} The non-nuclear states, hereby referred to as

\textsuperscript{26} Kelsey Davenport, "Chronology of U.S.-North Korean Nuclear and Missile Diplomacy," Arms Control Association, accessed October 2016
\textsuperscript{27} "The Treaty on the Non-Proliferation of Nuclear Weapons," in \textit{United Nations} (1968)
\textsuperscript{28} Verdier, "Multilateralism, Bilateralism…" page 458
\textsuperscript{29} "The NPT…" \textit{article I}, (1968)
NNWS, may not receive weapons or assistance. In addition, the IAEA has the license to verify fulfillment of these obligations and approve all transferred equipment and material.

The second pillar of the NPT is peaceful nuclear energy. Fulfilled through articles IV through V, all parties have the right to develop research, production, and use of nuclear energy for peaceful purposes. These articles promote the exchange of equipment, resources, and knowledge between all parties in the effort of development peaceful nuclear energy. Additionally, article III stipulates that non-nuclear weapon states are obliged to accept the verification of safeguards by the IAEA to prevent diversion of nuclear energy from peaceful uses to nuclear weapons.\(^{30}\)

The third pillar, and perhaps the most difficult to achieve, is disarmament. Established solely through article VI, the NPT states promise to pursue negotiations in good faith on effective measures relating to the cessation of the nuclear arms race. It is nearly impossible to enforce and quantify “negotiations in good faith,” making the progression of disarmament at the liberty of the nuclear weapon states. At the time of its creation, the NPT sought to create a weapon-free world. The active pursuit of disarmament efforts by the NWS has been disputed in the NPT review conferences that occur at five-year intervals, the argument being that nuclear weapon states are not nearly doing enough to relinquish their nuclear arsenals.\(^{31}\)

3.2 Nuclear and Non-Nuclear States

3.2.1 Nuclear Weapon States

The NWS have been established as the U.S., France, Britain, Russia, and China. Notably, these nations also derive power from their place as the P5 on the UN Security

\(^{30}\) "The NPT..." _articles III, IV, V_ (1968)

\(^{31}\) "The NPT..." _article VI_ (1968)
Council.\textsuperscript{32} Serving as world superpowers, the NWS are integrated into the treaty with consideration of their superior nuclear capabilities and fragility of their relationship with NNWS. The nuclear regime arms the cartel of NWS with discretion over peaceful nuclear resources, unanimous approval by all NWS of any amendments, and inherent monopoly over nuclear weapons.\textsuperscript{33,34} Though they are encouraged to share their nuclear resources, their possession of nuclear knowledge and materials cannot reliably be investigated or quantified in the IAEA, leaving the treaty with little ability to enforce this principle. Because nuclear weapons have increasingly become a political tool for the NWS, their existence upholds the treaty itself. The inexistence of nuclear states in the NPT would significantly decrease the compliance cost for many NNWS member, as will be further detailed in the next section.

3.2.2 Non-Nuclear Weapon States

The NNWS are those which did not detonate a weapon before the specified date. Multiple countries have given up their nuclear capabilities in order to become signatories of the treaty, including Ukraine, Kazakhstan, and South Africa.\textsuperscript{35} Through their membership, they are entitled to access any peaceful nuclear energy innovations other member states have achieved.\textsuperscript{36} The nuclear weapon states and those who have developed strong nuclear energy programs, such as Argentina, South Korea, Canada, Germany and Brazil, can provide resources for less capable states.\textsuperscript{37} Groups of NNWS are part of multilateral alliances, such as NATO and the Eastern bloc countries. Others enjoy the

\begin{footnotes}
\item[33] Verdier, "Multilateralism, Bilateralism…," page 442
\item[34] "The NPT," article VII.1 (1968)
\item[36] "The NPT…," article V. (1968)
\item[37] Borrie, interview by the author.
\end{footnotes}
security of bilateral agreements, as is the case with Sweden, South Korea, and Egypt. NNWS are forced to give up their right to nuclear weapon development upon NPT membership. In analyzing compliance incentives, we will explore how the power dynamic within the NPT has transformed the perception of nuclear weapons from a military deterrent into a political device.

3.2.3 Non-Member Nuclear States

Nuclear weapon states who remain outside the treaty include India, Pakistan, North Korea, and debatably Israel. In order for these states to join the NPT, they must do so as non-nuclear states, requiring them to extinguish their nuclear arsenals. However, holding onto these weapons allows them to perceive themselves as contenders in international nuclear security. The main purpose of nuclear weapons is not to redraw boundaries, but to achieve a different balance of power. Their failure to join the NPT implies their inability to use their nuclear weapons as a legitimate source of political power, as they fail to align themselves in a multilateral agreement that creates a comprehensive organization of a global security dynamic—“the NPT is thus a codification of a duel-standard sovereignty, a hierarchy where what is accepted for some nations is illegitimate for others.” The five existing nuclear state members, under the control of global governance, enable the transformation of nuclear weapons as a military threat to a valuable contribution to modern political security.

3.3 Compliance Incentives

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38 Verdier, "Multilateralism, Bilateralism…," page 443
39 "The NPT…," article IX, (1968)
40 Luciani, interview by the author.
41 Paul, "Power versus Prudence…"
In research on multilateralism, bilateralism, and exclusion in the nuclear non-proliferation regime, compliance and opportunity cost for NPT membership were analyzed on the basis of incentives.\(^{42}\) A multilateral treaty can benefit from superpower bilateral diplomacy. According to realists such as Mearsheimer, a multilateral agreement like the NPT fosters a multilateral beneficial relationship not on the basis of equal treatment and universal participation, but through the multilateral-bilateral dichotomy that enables stronger countries to incentivize and uphold membership.\(^{43}\) The NPT is constructed to facilitate the ability for more powerful states to offer membership and compliance incentives for states with an intermediate cost for compliance. This compliance cost refers to the expenses a country must pay for becoming a member. In the case of the NPT, these include giving up the potential to develop nuclear weapons, subjecting domestic nuclear programs to safeguards, and compromising isolationist approaches to national security. Way and Sasikumar argue that “states with acute security concerns are less likely to join the NPT, states with high energy needs are more likely to join it, and states for whom developing nuclear weapons would be a simple and inexpensive task are reluctant to join.”\(^{44}\) The incentives that seek to deflect a country’s compliance reservations reflect the perception of nuclear weapons as a source of political power and security.

A major incentive for alliance with nuclear weapon states has historically been the promise of security in the face of conflict: “the presence of a ‘nuclear umbrella' may be sufficient for many protégés to dampen concerns about security risks, allowing nuclear

\(^{42}\) Verdier, "Multilateralism, Bilateralism…," page 444
\(^{44}\) Way and Sasikumar, "Why and When…," Columbia International Affairs Online
ambitions to remain dormant.”\textsuperscript{45} However, we have noted that the practicality of actually using weapons as both an offensive or defensive strategy has become virtually obsolete in the face of modern warfare. So why do non-nuclear states continue to regard nuclear states as a security guarantee? It boils down to the evolving value of nuclear weapons as representations of power. The understanding of nuclear states as powerful military forces with deterrent capacities predated the NPT and eventually established it as an agreement that would protect against the spread of nuclear capacities in this context. Under this conception of nuclear weapons, states joined and have complied with the NPT to receive the benefits of a multilateral agreement that profits from asymmetric power. The deterrent value has enabled nuclear states more movement diplomatically on the international scale.\textsuperscript{46} Because of the combination of modern changes in warfare and the stigmatization of nuclear weapons as virtually useless, and thus their deterrent capacity also increasingly irrelevant, the original power of nuclear weapons upon which the NPT was constructed has become outdated. However, this initial effect precipitated a multilateral agreement that led to bilateral economic and diplomatic pursuits, such as fuel and equipment trade between the U.S. and South Korea, and an intensified perception of the power of alignment with nuclear states, as seen through the placement of U.S. warheads in NATO countries.

Compliance incentives initially revolved around security guarantees, legitimacy, and access to exclusive nuclear fuel and technology.\textsuperscript{47} Non-nuclear weapon states debated the worth of renouncing the option of a nuclear arsenal to join an agreement that

\textsuperscript{45} Erik Gartzke and Dong-Joon Jo, "Determinants of Nuclear Weapons Proliferation," \textit{The Journal of Conflict Resolution} 51, no. 1 (February 2007), page 170
\textsuperscript{46} Borrie, interview by the author.
\textsuperscript{47} Verdier, "Multilateralism, Bilateralism…," page 442
would provide these benefits. While plenty of states joined for these reasons, other states joined later on upon bilateral incentives, such as Egypt. The U.S. ability to influence Israel enabled American diplomats to reassure Egypt that Israel would not introduce weapons into the Middle East.48 By 1991, the U.S. had developed its nuclear power into a diplomatic political stronghold when its mediation and financial assistance for Belarus, Ukraine, and Kazakhstan resulted in their NPT membership as non-nuclear states.49

IV. Nuclear Power in the Context of Contemporary Conflict

The way that war is fought changes in the face of technological innovations, strategic developments, historical lessons, changing threats, and an evolving global security dynamic. In an age when weapons have become so destructive that an interstate war between superpowers has become inconceivable, conflict between states has drastically changed.50 The introduction of new offensive approaches, such as cyber-warfare and autonomous weapons, has depleted the military value of deploying nuclear warheads. Additionally, the formalization of humanitarian law and acceptance of global obligations to civil protection make the detonation of a nuclear weapon impossible as a functional strategy. The persistence of nuclear weapons and continuous negotiation over their control implies their persisting value in a changing global framework.

4.1 The Changing Nature of Conflict

In modern times, democratic states are much less likely to engage in physical interstate conflict among the changing qualifications of a powerful state. Instead, these

49 Drezner, The Sanctions..., page 175
50 Waltz, "Nuclear Myths...", 732
more advanced states engage in economic warfare by manipulating sanctions, trade agreements, currency values and exchange rates, and investment.\(^5\) The power of a state has come to reflect commercial and economic success and hegemony. Overall stability in a world with a diminished chance of physical conflict increasingly relies on political, economic, and diplomatic prowess. The decreasing threat of interstate war has initiated increasing threats by non-state groups using modern tactics that challenge traditional defense strategies. The introduction of information warfare, autonomous weapons, and terrorist tactics has altered the dynamic of international conflict. The evolving nature of offensive strategies by powerful states and the challenge of defending against new threats have rendered the deterrent and offensive power of nuclear weapons obsolete.

### 4.1.1 Economic Warfare

Economic warfare is an increasingly popular strategy by which states gain power through depleting the economic resources of opposing forces. States use domestic advantages in market control, trade surplus, currency strength, foreign exchange reserves, and private corporations as a means to assert diplomatic power. Trade embargoes, sanctions, tariff discrimination, freezing of capital assets, suspension of aid, blockage of investment and manipulation of capital flows serve as indispensable approaches to gaining political and diplomatic hegemony in the modern era. Using these tactics enables powerful states to control financial resources and use their economic monopoly as a bargaining chip in diplomatic processes. By combining the logic of conflict and methods

\[5\] Gyula Csurgai, "Geopolitics, Geoconomics and Economic Intelligence," in Canadian Institute of Strategic Studies (n.p.: Canadian Institute of Strategic Studies, 1998), page 3
of commerce, strong states have shaped the modern characteristics of conflict in the face of new perceptions of state power.\textsuperscript{52}

4.1.2 Non-State Actors and the War on Terror

The rise in terrorism on a global scale, with attacks breaking out from Russia to the U.S., is a growing phenomenon that has posed challenges for traditional deterrent strategies. Modern terror groups are characterized by dispersed and unspecified alliances, constant mobility, and indiscriminate attacks. Transnational, national, and subnational organizations and networks monopolize threats to modern security that are inherently difficult to defeat. As seen with ISIS, support is garnered largely over the internet and attacks can be hard to predict or trace. These movements lack a distinct home location, making terrorists hard to track, destroy, and defend against—attacks can originate in Kobani and be detonated in London. The indiscriminate and unpredictable nature of modern terrorism has precipitated a new and challenging threat to both international and domestic security.\textsuperscript{53}

Because of the decreasing probability of superpower interstate wars, most physical threats to security have come to revolve around insurgency groups, terrorist groups, and other violent non-state actors.\textsuperscript{54} A strong military capacity like the U.S. requires sizeable funding, intense training, and advanced strategic knowledge. However, modern technological warfare tactics require no face-to-face conflict, such as information warfare and autonomous weaponry.

4.2 Evolving Approaches to Offensive Tactics

\textsuperscript{52} Csurgai, "Geopolitics, Geoeconomics," in Canadian Institute, page 3
4.2.1 Information Warfare

Led by the “rapid evolution of cyberspace, microcomputers, and associated information technologies,” information warfare is increasingly becoming an offensive tactic to gain competitive advantage over an opponent under the assumption that modern security is highly reliant on technology.\(^{55}\) Tactics like shutting down computer networks, infiltrating intelligence information, sabotaging stock transactions or leaking classified information are used to weaken essential networks modernly used to preserve and uphold national security. Today, critical infrastructure protection centers on “civilian and commercial systems and services. Military force is less important.”\(^{56}\)

While cyber attacks do not pose a similar level of lethality as did nuclear weapons as a form of warfare, modern conflict has come to revolve around threats and destruction of security networks rather than physical mobilization.\(^{57}\) Because of the increased importance of economic standing as a determinant of power, effective warfare is conceived to be that which dismantles economic and security maintenance.\(^{58}\) Thus, nuclear weapon’s capacity for destruction not only makes them an unfavorable approach to conflict, but conveys little genuine threat of attack, as much more detrimental approaches can be taken to truly compromise a state’s security in the modern conception of state power.

4.2.2 Autonomous Weapons

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\(^{55}\) Roger C. Molander, Andrew S. Riddle, and Peter A. Wilson, *Strategic Information Warfare: A New Face of War* (Santa Monica, CA: RAND, 1996), summary


\(^{57}\) Pyun and Lee, “Globalisation Promotes…” Vox.

\(^{58}\) Csurgai, “Geopolitics, Geoeconomics,” in *Canadian Institute*, page 3-4
Modern warfare tactics center around the idea that “superior political will, when properly employed, can defeat greater economic and military power.”\textsuperscript{59} Along with the generation of information warfare, tactics like autonomous weapons support the idea that a strong military is extraneous for pursuing isolated and indiscriminate destruction. These weapons include drones, unmanned ground or maritime vehicles, software robots for cyber-attacks, and automated sentry guns.\textsuperscript{60} The ability to create targeting lists using military doctrine and targeting processes is inherently strategic, and handing this capability over to a machine undermines existing command and control structures and renders the use for humans redundant.\textsuperscript{61} Because these weapons can be deployed and controlled from isolated locations, it’s difficult to track the whereabouts of their deployment. Unlike nuclear weapons, which are bragged about by most possessors to convey a deterrent effect, autonomous weapons gain their power from their unpredictability and their lack of human control over targeting and attack functions.\textsuperscript{62}

4.3 Nuclear Weapons in Defense and Deterrence

4.3.1 Formalization of International Norms

The NPT has encouraged acceptance of international norms and has thus curbed motivations for the use of nuclear weapons.\textsuperscript{63} If humanitarian law had been as established and widely respected as it is today, the nuclear attack on Hiroshima and Nagasaki in 1945

\textsuperscript{61} Heather M. Roff, "The Strategic Robot Problem: Lethal Autonomous Weapons in War," \textit{Journal of Military Ethics} 13, no. 3 (2007), abstract
\textsuperscript{62} Erica Guizzo, "Autonomous Weapons ‘Could Be Developed for Use within Years,’ Says Arms-Control Group," Spectrum, last modified April 14, 2016
\textsuperscript{63} Gartzke and Jo, "Determinants of Nuclear….,” page 179
would have been in violation on multiple accounts. Humanitarian law regulates the conduct of war in order to protect civilians and manage the destructive capabilities of attacks. Certain conventional weapons such as biological and chemical weapons were not comprehensively banned in the use of war until 1980. Despite the lack of a reliable enforcement mechanism, violations of humanitarian law can be responded to with powerful public and media shaming, retraction of outside funding and support, and national and international tribunals. Compliance with and respect towards international law can be signaled through the NPT—countries can “use accession to signal their peaceful intentions and try to garner international support with their renunciatory act.”

Humanitarian law has struggled to address the ethicality of using cyber-warfare and autonomous weapons.

4.3.2 Obsolete Use in a Contemporary Context

Because of the changing dynamic of interstate conflict, new developments in warfare undermine or supersede the concept of nuclear deterrence. Nuclear weapons have long had power as a defensive threat to deter potentially attacking countries. Now that the genuine ability to use them has become superseded by the establishment of international norms, humanitarian law, and the challenge of attacking indistinguishable aggressors, their deterrent capability holds a symbolic rather than realistic effect. In a nuclear world increasingly threatened by terrorism, it’s clear that nuclear weapons have

68 Way and Sasikumar, "Why and When," Columbia International Affairs Online
70 Borrie, interview by the author.
not deterred the persisting threat of non-state aggression.\textsuperscript{71} The ability of nuclear weapons to convey power because of their historic representation justifies their continued importance as a source of political power.

V. Nuclear Validation: Hegemony and Monopoly

The NPT validates the existence of asymmetric power within the non-proliferation regime. This treaty has been created and maintained through the existence of power dynamics between nuclear and non-nuclear states by enabling powerful states to incentivize membership and compliance by promising security and peaceful nuclear energy resources. Inherently, it attempts to promote disarmament and create more equitable access to peaceful nuclear energy research and resources. But because the treaty is sustained by a power dynamic that is trying to be dismantled, disarmament of the NWS would result in changes in the current global power distribution and challenge the very existence of the NPT.\textsuperscript{72} The debate of whether the NPT seeks to really achieve disarmament of the NWS or whether it benefits from nuclear weapon states by upholding the status quo calls into question the future of the NPT. The newfound power of nuclear weapons as a political resource dismantles the genuine threat of usage, but promises diplomatic leverage, given that “proliferators are subject to diplomatic pressure and international sanctions, as well as legal and moral condemnation.”\textsuperscript{73}

5.1 Establishment of Economic and Diplomatic Superpowers

\textsuperscript{71} Borrie, interview by the author.
\textsuperscript{72} Borrie, interview by the author.
\textsuperscript{73} Gartzke and Jo, “Determinants of Nuclear…,” page 168
The promise of an organized treaty facilitating the share of nuclear knowledge and controlling the actions of nuclear states incentivizes countries to trust existing nuclear states as reliable diplomatic resources. The existence of few powerful states in a multilateral agreement with an overwhelming majority of weaker, less capable states allows these weaker states to wrestle for concessions with the great powers who “have an interest in controlling proliferation” in exchange for giving up their freedom to maneuver. In addition, leaving the treaty creates exit costs if they are in violation. While the NPT itself has no enforcement provisions, all members sign an agreement with the IAEA. Apart from formal provisions, violating or exiting the treaty can have consequences for a state’s international reputation. Doing so isolates a state from the benefits of a comprehensive multilateral alliance where the most powerful states are at the liberty to share nuclear knowledge and equipment, provide security for other states, and legitimize another state’s actions.

Perhaps the most notable case of the power of nuclear hegemony can be seen with Iran. Signing the treaty in 1968, Iran subjected itself to standard monitoring and safeguards of nuclear facilities and programs by the IAEA. Iran’s actions became closely tracked and IAEA reports shaped the U.S. diplomatic approach to Iranian relations. In 1998, the Clinton Administration opposed Iranian nuclear programs under the argument that they had sufficient oil for energy supply, and that a nuclear power reactor would facilitate a nuclear weapons program. Additionally, U.S. political power induced Ukraine’s denial to sell equipment for use at an Iranian reactor under investigation. In

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74 Paul, "Power versus…," page 23
75 Way and Sasikumar, "Why and When…," Columbia International Affairs Online.
76 Way and Sasikumar, "Why and When…," Columbia International Affairs Online.
2000, President Clinton signed the Iran Non-Proliferation Treaty, enabling the U.S. to impose sanctions on individuals or organizations providing resources to Iran’s nuclear program. This reflects the ability of the U.S. to use its standing in the international community and in the NPT to compromise the security of one state by manipulating the actions of others. In 2003, additional protocol expanding the Safeguards Agreement was signed by Iran to enable short notice inspections. That same year, Iranian President Khatami attested to the political motives behind pursuing nuclear power: "We don't need atomic bombs, and based on our religious teaching, we will not pursue them...but at the same time, we want to be strong, and being strong means having knowledge and technology." The connotation of nuclear capability associated with political power and diplomatic prerogative drives countries to this day to value nuclear weapons.

5.2 The Current Global Security Dynamic

One major factor of the NPT is the establishment of the five nuclear weapon states and the existence of four nuclear non-members. Pursuant to article IX section 3, nuclear states willing to join the NPT must have detonated a weapon before the 1st of January 1967, or must disarm to become a NNWS. This article fortifies the power held by the NWS by making it exclusive and non-competitive. Glaser suggests that, unless there is a complete transformation of international relations, the promise for disarmament to protect against nuclear war is weak. The NWS “try to do enough on disarmament to show they care, but have taken a tough line on countries like Iran that look like they

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77 Semira N. Nikou, "Timeline of Iran's Nuclear Activities," United States Institute of Peace.
79 Glaser, "The Flawed...," page 124
might break out of the NPT” in order to preserve the current order.\textsuperscript{80} Although the NPT seeks to encourage states to “pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race,” the power dynamic upheld through the treaty normalizes and perpetuates the status quo, deterring any real incentives for disarmament.

\textit{5.2.1 NPT’s Exclusive Membership}

The four nuclear non-member states include India, Pakistan, North Korea, and, more likely than not, Israel. In accordance with Verdier’s theory of compliance cost, states with little incentives to disarm would find membership and compliance more detrimental than beneficial to their national interests.\textsuperscript{81} In his research, he found that participation in an enduring rivalry indicates a significant security threat, which makes a state less likely to want to join the NPT.\textsuperscript{82} For example, it can be argued that India, a state that developed nuclear weapons in 1967, maintains a nuclear arsenal largely out of continued tension with Pakistan, who has since developed nuclear weapons as well.\textsuperscript{83} Threatened by powerful rivals, North Korea may use nuclear weapon capabilities to level the playing field with their global competitors.\textsuperscript{84} Israel, a strong U.S. ally in a region of U.S.-Middle Eastern tension, avoids the risk of IAEA violations by remaining a non-NPT signatory state. It has been proposed that Israel prefers to have nuclear weapons, or

\textsuperscript{80} Tim Caughley, interview by the author, United Nations Institute for Disarmament Research, Geneva, Switzerland, November 4, 2016.
\textsuperscript{81} Verdier, "Multilateralism, Bilateralism…," page 469
\textsuperscript{82} Way and Sasikumar, "Why and When," Columbia International Affairs Online.
\textsuperscript{83} Praful Bidwai and Achin Vanaik, "New Nukes: India, Pakistan, and Global Nuclear Disarmament," \textit{Political Science Quarterly} 116, no. 4, page 644
\textsuperscript{84} Way and Sasikumar, "Why and When…," Columbia International Affairs Online.
maintain nuclear ambiguity, as to convey regional strength in the face of instability in the Middle East and the threat of Iran.  

Prohibiting membership of new nuclear states into the NPT is largely a double standard, but admits that integrating other nuclear states into the NPT could threaten the current global security dynamic upheld by the five legitimized nuclear states. Many states comply with the treaty and have relinquished the possibility of developing their own nuclear weapons program for the security and diplomatic benefits of aligning themselves in a multilateral agreement with powerful states. By this logic, in the event that a current nuclear non-member state relinquished its nuclear arsenal, that state would further jeopardize its current unstable security that inherently inhibits it from valuing the benefits of the treaty. The existence of nuclear non-member states and their prohibition from joining the NPT in their current state reflects the political balance that nuclear weapons uphold. The supremacy of Russia, the U.S., France, Britain, and China in upholding global economic processes and multilateral diplomatic agreements would be threatened if the nuclear power of more states were to be validated through the NPT.

5.2.2 Safeguards on Nuclear Energy Development

Besides the aspect of non-member states, the NPT maintains the current global security dynamic by preventing proliferation of NNWS through strict IAEA safeguards, while inherently acknowledging the existence of nuclear programs in the NWS. The threat of Iran has been combated so harshly because of the potential for nuclear weapons to upset the regional balance of power in the Middle East. The desire for nuclear weapons

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86 Verdier, "Multilateralism, Bilateralism…," page 442
87 "The NPT," article III, (1968)
as political tool can be seen through Iran, a state that is “surrounded by nuclear powers—Russia to the north, Pakistan to the east, Israel to the west, and the US 5th fleet in the gulf itself.” \textsuperscript{88} The IAEA has the ability to safeguard against developing peaceful nuclear energy into enrichment or reprocessing programs capable of producing nuclear weapons. If Iran were to develop nuclear weapons, they could provoke Israel, a non-member state not under the safeguards of the IAEA, or could provoke other Middle Eastern countries to pursue nuclear weapons as a defense reaction. \textsuperscript{89} The ability for existing nuclear states to monopolize power in our current state of global security is upheld and reproduced by the NPT. If the NWS were to disarm, the presence of external nuclear states not under the same obligations would pose a threat to international security. \textsuperscript{90} Thus, in an effort to uphold global security, nuclear weapons are maintained.

\textbf{VI. Conclusion}

The history and progression of nuclear weapons has demonstrated the unique evolution of this conflict strategy from warfare defense, to deterrent, to security promise. The combination of these factors that have developed among an era of globalization has cemented nuclear weapons as a source of a diplomatic and economic stronghold. As countries progressively developed stronger and more numerous nuclear arsenals, the practicality of using them greatly diminished. Their presence and qualifying factor in the NPT reinforces them as a way for powerful states to project power and influence diplomacy. The NPT bolsters the effect that nuclear weapons have. The power dynamic

\textsuperscript{88} Luciani, interview by the author.
\textsuperscript{89} Gawdat Bahgat, “Nuclear Proliferation: The Islamic Republic of Iran,” \textit{Iranian Studies} 39, no. 3 (August 3, 2006), page 316
\textsuperscript{90} Glaser, "The Flawed....," page 124
between NWS and NNWS has initiated reliance on the existence of these weapons to uphold compliance of states in the hopes that doing so will result in a projection of alliance power.

Also precipitated from the changes in global conflict, nuclear weapons have shifted from weapon to political resource. Perhaps partially in light of nuclear weapons, interstate conflict centers on economic warfare, as economic resources have come to define the strength and hegemony of a state on the global stage. The growing threat of information warfare and autonomous weapons renders nuclear weapons incompatible in deterring or defending against modern forms of conflict. Because of this, the deterrent effect of nuclear weapons so valued in prior decades as begun to diminish. The existence of these weapons is validated by the NPT as it has precipitated nuclear weapon states to monopolize control over economic and diplomatic multilateral and bilateral negotiations. The construction of the NPT itself, prohibiting the addition of more nuclear weapon states, reinforces the current power distribution by limiting nuclear power to the five NWS and thus enabling them to monopolize nuclear weapon capabilities that has come to denote legitimate political power.\footnote{Paul, "Power versus…" (2000)} It is on this principle that the NPT will likely face trouble to successfully encourage the disarmament of these nuclear weapon states.
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