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Untangling Paradox: A Humanitarian Perspective on Nuclear Weapons Trade in Non-Proliferation Ambition

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Article

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Abstract

The emerging issue of the legality of nuclear weapons trade by the state remains unclear as the use of nuclear weapons itself. Nuclear weapons are perceived either as a threat to human lives or a potential guarding system for a state. Contrary for the latter, states have the enormous ambition to establish non-proliferation of nuclear weapons to justify its use. Trade practice is prone to be bent as a tool to develop nuclear weapons programs. This research is a normative legal research that uses statutory and conceptual approaches. By examining both legal instruments and fundamental principles of humanitarian law are able to elucidate the paradox of non-proliferation and nuclear weapons trade conducted by states. Humanitarian principles are an adequate fundamental basis to examine the legal uncertainty of nuclear weapons use. Jus ad bellum defined that nuclear weapons violate proportionality and precautionary principles. The study argues for a particular legally binding instrument to prohibit nuclear weapons as a subject to international trade regime. Furthermore, the International Atomic Energy Agency as an authorized institution must be strengthened in order to maintain the peaceful use of nuclear energy as well as programs developed by states.

Introduction

Human intelligence has evolved, influencing various aspects of life, leading to more complex and dynamic thinking and actions. In the face of modernization, countries develop weaponry to protect their citizens. This evolution ranges from basic tools like clubs and bamboo to advanced weapons like submarines, bombers, and nuclear bombs, all in the name of national defense. Nuclear weapons are classified as

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Weapons of Mass Destruction (WMD) due to their inherent characteristics (Haloho et.al., 2020). Nuclear weapon is a type of explosive device by passing either fission or fusion nuclear reaction in order to acquire its explosive strength, whereas the process of nuclear reaction is by releasing a humongous amount of energy from a small amount of mass (Basri, 2014). The explosion scale has the potential to destroy a city by explosion, fire, and radiation. Nuclear weapons have the characteristics of endangered human civilization towards extinction. The type of weapons that used nuclear energy can lead to superfluous injuries and unnecessary sufferings (Terok, 2017.). Such as the Hiroshima-Nagasaki bombing, Tsar Bomba, Chernobyl, and Fukushima tragedy. Using nuclear energy to fulfill arms interests caused a so-called special classification from any other weapons, this can be seen in speed and the power to destroy (Haloho et.al., 2020).

In international humanitarian law (IHL), weapons that are considered to be WMD are prohibited for violating one of the most fundamental aspects which is the principle of proportionality. Proportionality sided with distinction and precautionary principle to protect civilians in armed conflicts (Kleffner & Boutruche, 2008). It stated the prohibition to target military objects with high probability of destruction and civilian casualties. In maintaining humanitarian law order, an assault must be thoroughly considered (Bartels, 2013), even canceled based on Article 57 (2) (b) Additional Protocol I, to minimize excessive risks of incidental strikes towards civilian lives. Selecting a weapon with the smallest ability to produce is also an action to enforce the principle of proportionality (Mahfud, 2013). Nuclear weapons defy both the idea of proportionality and the principle of precaution. This also involves consideration regarding potential danger towards the environment (Bothe, 2020) even without convincing scientific proof (Sandin, 2004). This principle is not only involved with humanitarian law, but also environmental law whereas a precautionary action is essentially needed in order to preserve fundamental environment and human rights.

Nuclear, in relation to the environment, brings up a dark history of the past. The Chernobyl nuclear disaster in Reactor 4 spread radioactive material, including iodine, across Europe, primarily affecting Belarus, Russia, and Ukraine. Soil contamination occurred as radioactive materials were carried by wind and dispersed by rain clouds. Physicochemical properties of radioactive materials, such as weight, influenced the contamination patterns, with heavier materials falling faster than lighter ones like cesium-137. (Saenko et.al., 2011). The widespread use of radioactive materials takes place for 10 days straight. This tragedy is perceived to be the most disastrous nuclear

accident by International Nuclear and Radiological Events Scale (Vogt, 2023). Therefore, the principles of humanitarian law do not justify the weaponizing of nuclear energy.

Nuclear weapons have its starting point in the international community before becoming a trend. In 1945, the USA conducted the first nuclear weapon testing as part of what was famously known as the "Manhattan Project," in what was perceived as a retaliatory measure for the Second World War. The test result then caused millions of deaths in Hiroshima and Nagasaki (Basri, 2014). Nuclear radiation wiped off cities, limiting civil movements, even resulted in long-lasting genetic effects (Sodei, 1995). This event, marking the end of World War II, ushered in the nuclear age. Superpowers began harnessing nuclear power for weaponry development, leading to the ownership of nuclear weapons as a symbol of national defense by 1950. However, the humanitarian implications of nuclear weapons raise profound questions about the balance between state sovereignty and human interests. Former ICRC President Jakob Kellenberger emphasized the need for international negotiations to prohibit and eliminate nuclear weapons, aiming to end an era defined by weapons capable of immense suffering and destruction (Sodei, 1995).

The international community, acknowledging the proliferation of nuclear weapons among numerous nations, established the Nuclear Non-Proliferation Treaty (NPT) to limit possession and prevent further spread. Despite the NPT's three core pillars—nuclear disarmament, non-proliferation, and peaceful nuclear energy—challenges persist from both state and non-state actors with nuclear capabilities, posing a significant contradiction. UN Secretary-General Antonio Guterres emphasizes nuclear disarmament as crucial for future generations' well-being. The Treaty on the Prohibition of Nuclear Weapons (TPNW) aligns with the NPT's goals, aiming to strengthen global commitment, while the International Atomic Energy Agency (IAEA) promotes peaceful nuclear energy use. Non-nuclear weapon states support efforts like the IAEA that balance military activities with humanitarian concerns (ICRC, n.d.). Stated in the statue, IAEA has an essential function to supervise nuclear energy. Unfortunately, many countries ruthlessly ignore and violate the statute of IAEA by establishing nuclear weapon projects.

Reviewing the good old days in the Cold War, the United Kingdom blew its first ever nuclear fission on October 2nd 1952, France on February 13th 1969, and China on October 16th 1964 (Basri, 2014). The Nuclear Age fantasy became reality as state-actors increased their nuclear weapons ownership and engaged in international trade

involving nuclear weapons. Before joining the NPT, China fostered diplomatic-economic ties with Pakistan, providing uranium, blueprints, and even education for nuclear bomb development. Reports also suggest China supplied missile technologies to Pakistan, enabling the construction of missiles with extended ranges (Dori & Fisher, 1998). Article 1 of the NPT prohibits the transfer of nuclear weapons and explosives. This underscores the danger of state authority over nuclear weapons, which, if unchecked, could lead to their normalization for self-defense and international relations, risking abuse of power.

The United Nations Security Council established Resolution 1540 in 2004 to prevent nuclear weapon proliferation, focusing on material transfers. It prohibits states from engaging in activities related to nuclear, chemical, and biological weapons, including their development, production, possession, transportation, movement, and utilization. While the resolution doesn't explicitly address nuclear weapons transactions, international export regulations and controls enforced by the World Trade Organization in collaboration with the UNSC align with its goals. However, IAEA oversight of nuclear weapons trade lacks firm codification. The UN Human Rights Committee underscores that nuclear weapons possession and use violate the right to life, urging states to halt WMD mass production and establish clear regulations prohibiting their possession (United Nations, 2014). In other words, General Agreement on Tariffs and Trade (GATT) dan World Trade Organization (WTO) does not give any explicit limitation in terms of state conduct towards nuclear trading, which has created dilemmas with the NPT and Arms Trade Treaty (ATT), which the ATT has firmly prohibit nuclear weapons trade.

Nuclear weapons trading, regulated by jus ad bellum, has emerged as a major concern due to its potential to escalate conflicts and violate humanitarian law. The disproportionate and unpredictable nature of nuclear weapons raises serious humanitarian and security risks, including the possibility of non-state actors obtaining them. These issues fall under the domain of international humanitarian law (IHL). Inconsistent international regulations create opportunities for exploitation, particularly by powerful states, jeopardizing efforts to prevent nuclear proliferation. Prohibiting or limiting nuclear weapons trade is crucial for protecting human rights and broader humanitarian interests, requiring urgent attention and action from the international community. This research will show how a firm international regulation void could resulted to nuclear weapons trading is seen from the perspective of IHL. This research aims to provide an overview of how IHL principles, such as precautionary measures

and proportionality, underscore the necessity of establishing explicit regulations to highlight the risks and dangers associated with treating nuclear weapons as commodities in international trade.

Method

This research uses normative research methods, where legal products such as laws, legal principles, and legal doctrines are used as a basis for answering the legal issues analyzed. Research with this method aims to express the truth on the basis of scientific logic by looking at the normative side. In this research, the emerging problems has elucidated with statutory and conceptual approach to find the proper solution. First, statutory approach manages, examines, and analyzes *ius constitutum* regulations related to the issues raised by the author. The laws used as a basis are the NPT and the IAEA Statute. Second, conceptual approach is intended to understand and analyze legal materials with the aim of knowing the meaning contained therein. Then the understanding that arises becomes the basis for researchers to create new patterns of thought or legal argumentation. The conceptual approach involves utilizing legal and theoretical concepts as a foundation for examining the challenges encountered (Puspita et.al., 2024).

Discussion

1. The Legality of Nuclear Weapons Trade in International Law

Nuclear weapons have brought variative impressions from around the globe. Some states declared that nuclear weapons are the perfect instrument to bring order to protect a country from malicious threats (Sagan, 1996). Others say it would cause nuclear war, leading human civilization to its own destruction (Huisken, 2023). The idea of chaos in international society towards nuclear weapons triggered countries to find allies in sharing the same ideas on the existence of this type of weapons, be it approving or opposing. Nonetheless, the international co-operations of approving countries somehow is quite unsettling. Nuclear weapons being an object in global trade, have seen to be another threat towards human lives.

Learning from the tragedy of Hiroshima-Nagasaki, nuclear weapons will eventually be used at some point of conflict, seeing the vast improvement of nuclear power in mainly developed countries can bring major chaos or the so-called 'domino effect' or in other words, a nuclear war. The system of the international community with finding alliances and spreading propagandas was a form of mutualism symbiosis

conducted by states to survive. This is why when a conflict happens, there is no possible guarantee that other countries would refrain themselves from adding more fires to the current situation. From that idea, there are no guarantees that the traded nuclear weapons will be kept unused. Thus, the mere possession of nuclear weapons itself already threatens global security, more so if nuclear weapons trade occurs and leads to mass production. If the nuclear war started, the downfall of humanity is on the brink of possibility to happen.

Nuclear weapon trading could be seen as a starting point of a nuclear war to happen, as many states labeled themselves with the actions of self-defense by possessing nuclear weapons. At this point, *jus ad bellum* would not define handling a threat by using nuclear weapons as a just cause of war as a form of self-defense, as how it was regulated in Article 51 of the UN Charter. This is stated in Paragraph 41 of the Advisory Opinion 1996 on Legality of The Threat or Use of Nuclear Weapon. The nature of *jus ad bellum* is weapon-neutral. It doesn't inherently forbid or allow any specific weapon, including nuclear weapons. Instead, it focuses on whether the use of force itself is lawful with the respect to the principle of proportionality (Hayashi, 2014). In other words, simply possessing them doesn't automatically make their use legal. However, the ownership of it deliberately forms a threat to human lives. Unlike conventional weapons often used in conflicts, the effects of nuclear weapons extend far beyond combatants and battlefields. Hence, the international community must collectively address nuclear weapon trading as one of the imminent threats to the survival of all living beings on Earth (Dewanto & Krustiyati, 2024).

Radioactive fallout and environmental contamination pose long-term threats to civilian populations, generations to come, and ecosystems. Of course, by acknowledging those effects but somehow still pertaining to the ownership of nuclear weapons would be contradictory with the essential key in environmental decision making element, such as precaution steps where in IHL oftenly called as principle of precaution (Sandin, 2004). Precautionary stands as a guiding principle to consider legislators or decision makers to consider potential harmful effects before the action is taken, therefore a threat is to be prevented from implicating the environment in a negative way (Cameron & Abouchar, 1991). Seeing the effect on Hiroshima-Nagasaki victims, nuclear weapons destroy everything around it, including the natural ecosystems. Eight bombs, each with a 125-kiloton yield, would destroy 160 square miles, compared to a single bomb with a 1-megaton yield that would destroy 80 square miles (Atomic Archive, n.d.). The issue of nuclear weapons trading is beyond the lens

of International Trade Law (ITL), this considers the characteristics of the nuclear itself as an object of global trade could potentially endanger humanity. The categorization of nuclear weapon trading under IHL reflects the recognition of its potential for causing immense human suffering and the need to prioritize the protection of life and dignity over purely economic considerations.

The NWS practices for using the label of 'self-defense' can be perceived as an alibi to justify the ownership of nuclear weapons. In other words, nuclear weapons are meant to be used in the times of war eventually. The no-first-use (NFU) policy cannot be guaranteed. While some countries like China (Davis & Ramana, 2018) and India has officially adopted and promises not to use it towards the NNS (Sundaram & Ramana, 2018), major nuclear powers like the United States and Russia do not have an official NFU policy. The lack of commitments makes it doubtable for it to be legally binding. In the end, there are no barriers to prevent NWS from using nuclear weapons. Hence, humanitarian law was to fill this legal gap. Though it may appear connected to economic transactions, the trade of nuclear weapons goes beyond the scope of trade laws and firmly falls under international humanitarian law (IHL). This distinction is based on the exceptional and catastrophic characteristics of these weapons, turning their transfer into more than a mere commercial activity but a possible breach of proportionality *ad bellum*, the legal framework governing the use of force among states. Even if used with proportionality in IHL terms, using nuclear weapons might still be deemed disproportionate *ad bellum* due to their immense destructive potential and violation of other legal principles.

In terms of *lex generali*, the UN has clearly forbidden the use of force contrary to its objectives specifically in Article 2(4) of the UN Charter. In more depth, the ICJ has delineated the use of force against states possessing nuclear weapons in its Advisory Opinion regarding the Legality of Threat or Use of Nuclear Weapons. Weaponizing nuclear energy as an object of international trade is irrelevant with the IHL's essential principles, such as proportionality and precautionary. In the multi-agreed rulebook of armed conflict, disproportionate attacks are prohibited. The notion of proportionality is commonly stated in military manuals and rules across several nations, and it is acknowledged as a legally binding duty for states under customary international law (Beard, 2018). The most generally recognized formal expression of this principle is this multilateral prohibition.

Indeed, the international community has put many efforts to eliminate nuclear weapons in variative ways, most of them using the instruments of diplomacy. Many

international treaties had been born after the Second World War, realizing the catastrophic potential it may bring from the nuclear testing practices. Even until now, nuclear weapons have not been fully eradicated. Not to mention NPT, TPNW, IAEA, and many other regional treaties regarding their opposing idea towards nuclear weapons. Solidarities in NNWS started the Treaty of Prohibition of Nuclear Weapons (TPNW). Despite having the word "prohibition" in its name, TPNW is nevertheless meaningless in advancing the goal of preventing the spread of nuclear weapons. The aim of the agreement was to address the legal vacuum (Lennane & Moyes, 2021), to prohibit the existence of nuclear weapons but it resembled 'just' a commitment between countries, not a legally binding one which was able to eliminate the mere existence or moreover the trade of nuclear weapons. Nonetheless, numerous nations continue to retain nuclear weapons and among them are the main actors in the United Nations Security Council (UNSC), which realistically made it harder to eliminate nuclear weapons (Huisken, 2010). It also drew a question mark towards the states who ratified the humanitarian conventions but also possess nuclear weapons. The contradiction of international law and state practices can be seen through those cases.

A Chinese politician, Deng Xiaoping stated that until the Nuclear Weapons State (NWS) permanently eradicates nuclear weapons, it is not within its jurisdiction to prevent Non-Nuclear Weapons States (NNWS) from formulating plans for nuclear weapons proliferation (Davis, 2009). In pursuit of their national interests rather than global security, the five states that have declared their nuclear capabilities leverage the NPT to maintain a monopoly. Regulating the presence of nuclear weapons is regrettably not explicitly forbidden by any international legal framework. This gap could lead into the normalization in nuclear weapon trading. Even the International Court of Justice poured their perspective in the Advisory Opinion and couldn't give a straight yes-or-no answer. ICJ's set of judges got split between opinions regarding the matter of legality to threaten with nuclear weapons. However, unanimity among all fourteen judges was reached on the acknowledgment that there is a duty to genuinely engage in negotiations aimed at achieving nuclear disarmament comprehensively, subject to stringent and effective international oversight, and to see these negotiations through to completion (Gibbons, 2018). Hence, the establishment of Advisory Opinion can be perceived as abstract and gray, seeing that it's merely convincing but not binding to state parties, despite the Court's divide and the arguments put out by the leading nuclear nations to support nuclear weapons legitimacy in the international law (Magnarella, 2008).

Before the trend of NPT, a potential nuclear weapon trade had occurred in the international community. This so-called phenomenon could be perceived as a potential due to its object of transfer, which is not a final design of a nuclear weapon being transferred to another country, but more of its core materials. It dates back to the Pakistan-India conflict on Kashmir as the object of territorial dispute. The complex conflict between India and Pakistan spans decades, marked by wars, tensions, and accusations of cross-border terrorism. Though recent attempts at dialogue offers hope of peace, resolving core issues remains a monumental challenge, impacting millions and posing a potential regional security threat with the shadow of nuclear arsenals potentially looming large which can lead to worse outcomes such as the Nuclear War (Cheema, 2015). Moreover, this dispute also involves industrial weaponry-leading countries to support both parties in winning the war.

Concerning nuclear collaboration, China and Pakistan forged diplomatic relations. China extended significant support to Pakistan's nuclear weapons program during the early 1980s, including the provision of scientists, highly enriched uranium, tritium, and the requisite components for constructing nuclear weapons. A blueprint of nuclear weapons (1983), weapons-grade uranium production (since 1983), ring magnets for gas centrifuges (1994–1995), tritium for boosting the potency of atomic weapons (1986), heavy water for plutonium manufacturing (1996), specialized equipment for crafting nuclear bomb cores (1996), advanced diagnostic tools (1996), and others were all significant contributions. China was involved in the construction of the unguarded Khushab reactor, which provided plutonium for weapons. It also shipped the PARR-2 experimental reactor, the plutonium reprocessing plant, and the IAEA-safeguarded Chasma reactor to Rawalpindi (Paul, 2003). This was China’s effort to support Pakistan both military and politically. Not to mention its national interest to pursue expansion of nuclear-proliferation (Ramana, 2023).

However, the transfer occurred before China became a signatory to NPT. According to CIA Reports, China still maintains its diplomatic relations with Pakistan, post-signatory to NPT. However, China published a comprehensive set of new export restriction limits for chemicals, poisons, and missile technology in October 2002 (Ramana, 2023). A policy of distinction among nonproliferation commitments is replacing China's nonproliferation exceptionalism. The Chinese government can avoid criticism for its nonproliferation behavior by selectively embracing certain responsibilities while rejecting others (Davis, 1995). Therefore, China has become the

perpetrator of nuclear proliferation in South Asia by conducting transfer of nuclear weapon components.

Other than the Sino-Pakistan nuclear trade cooperation, Iraq was suspected to be conducting the trade of materials as well. As per the 1996 nuclear programme accounting of Iraq, Saddam Hussein received the necessary components and expertise to fabricate an atomic weapon from numerous vendors, the majority of whom were situated in Europe, the US, and Japan. UN representatives claim that the classified document that was sent to The Associated Press is almost exactly the same as the one that was turned in to inspectors on December 7. The studies have not been made public to preserve nuclear technology from getting into the wrong hands and to shield the identities of companies that gave Iraq the means to produce nuclear weapons, whether knowingly or unknowingly (The Associated Press, 2002). This phenomenon represents the outcome towards the absence of explicit legal basis and organization to watch over nuclear trade.

Perceiving this 'trade' issue from the lens of the humanitarian sphere, perhaps would be a compatible way due to its nature for being used at the times of war (*jus ad bellum*). Therefore, activities such as trading nuclear weapons wouldn't guarantee the impossibility of the state from using it. Nuclear weapons breach the concept of distinguishing between fighters and civilians by causing enormous and indiscriminate destruction. Trading such weapons arguably facilitates their potential use, contributing to future harm indiscriminately. This is explicitly in contradiction with principles in humanitarian law, mainly proportionality and precautionary principle. Proportionality is an important tool to control the unilateral use of force (Cottier et.al, 2017), which has to bring the balance between the advantages and disadvantages brought about by the law. In ensuring the implementation of proportionality are based on wheel machines consists of adequacy, necessity, and proportionality *stricto sensu*. Adequacy as the concept of the correct and effective method to solve an issue, in this case a correct instrument for the job. In analogy, you don't use a paper tape to seal a pipe leak. As for necessity, was a concept to use less intrusive solution in addressing the issue to minimalize damage presented by the cause of using the solution.

Finally, proportionality *stricto sensu* was a concept of final balancing act to ensures a fair trade-off, where the benefits outweigh the burdens (Cianciardo, 2010). These three foundations help guarantee that laws are effective without excessively restricting human rights. This balanced approach allows, for example, the use of force as a last resort to defend human rights, but only with careful consideration to minimize

collateral damage. Human rights are fundamental entitlements inherent in every human being from birth, which cannot be challenged or disputed (Abil et al., 2022). Between these human rights are the rights to live and the rights to defend. The use of force to enforce both human rights may be considered lawful in exceptional circumstances, but only if it adheres to the principle of proportionality. This means the action must be necessary, achieve a legitimate aim, and minimize harm to civilians and other rights. Trading nuclear weapons for defensive purposes is demonstrably unnecessary and a dangerous gamble. Owning a WMD doesn't guarantee a country's safety, but rather puts civilians at immense risk. Nuclear weapons are indiscriminate and uncontrollable, making the potential consequences far outweigh any perceived benefit. Therefore, the very idea of nuclear weapon trading is an intrusive and reckless act.

A step back with thorough consideration of whether to involve a WMD either in defense interest or even wars is needed. Additional Protocol I to the Geneva Convention strongly encourages states to take all possible precautions to avoid environmental damage caused by military actions. The precautionary principle can be understood through four key dimensions. The threat dimension focuses on the seriousness of potential harm, with earlier action for even minor threats reflecting a stronger application of the principle. The uncertainty dimension acknowledges the lack of complete scientific knowledge, prompting caution when the potential consequences are significant. The action dimension prescribes the type of action needed, with more extensive measures suggesting a stronger precautionary approach. Finally, the command dimension addresses the strength of the obligation to be cautious, with a stronger obligation signifying a more robust application of the principle. In essence, all these dimensions work together to determine the appropriate level of caution warranted by a particular situation (Sandin, 1999). While Article 58 (c) Additional Protocol I doesn't explicitly mention the environment, it shouldn't be considered a legitimate military target (Vincze, 2017**).** Even though environment wasn't explicitly stated in article 58 (c) Additional Protocol I, it shouldn't be considered as a military objective. Environment was a functional structure for every component of living creatures to survive both civilians and military personnel. Hence, the 'constant care' to spare civilian population, civilians and civilian objects as mentioned in Article 57 (1) Additional Protocol I extends to environmental protection. The precautionary principle demands careful consideration of the ecosystem and biosphere before any military action. This principle emphasizes preventing undesirable consequences, making it a

truly precautionary measure. From this perspective, nuclear weapons are fundamentally incompatible. Nuclear weapon trading poses a threat to the intrinsic core of nature when not in use and could eventually lead to environmental abuse when in use not to mention the radioactive implication that would deeply imprint the environment in a long-term scale.

Proportionality and precaution are fundamental principles of IHL governing the use of force. Even in the context of trading nuclear weapons, rather than detonation, the very nature of these weapons contradicts both principles. Consequently, any nuclear weapon trade constitutes a violation of IHL, particularly these two core principles. This became a so-called declaration regarding the use of force is not unlimited. Therefore, it is a humanitarian order to push strategies on nuclear disarmament deliberately. The journey began from signing treaties on nuclear disarmaments (START, NWC, CTBT) until non-governmental campaigns. Due to country failures in pursuing nuclear disarmaments in the 2005 NPT RevCon, triggers the ultimate wake-up call towards the world. Demonstrating its effectiveness in addressing these issues, the ICRC, as the custodian of international humanitarian law (IHL) on behalf of the international community, effectively limited small arms and advocated for the prohibition of blinding lasers, anti-personnel landmines, and cluster munitions (Gibbons, 2018).

In such a matter, the international community started to create a legal framework to supervise arms trade. The WTO has shared insights on using international agreements beyond its framework for export regulations, targeting objectives like environmental protection, hazardous waste management, weapons control, and combating illegal drug trade in a form of publication consisting of three chapters such as environmental protection, drugs control, and weapons and disarmament. Nuclear weapons however are mentioned in the sub-chapter of United Nations Security Council resolutions and export controls.

Export control regulation is a form of legal framework started by the WTO in accordance with the Security Council Resolution No. 1540 which can be domestically implemented by countries according to their own doctrines. However, everything related to both nuclear energy and weapons are required to be in accordance with the non-proliferation agenda (World Trade Organization, 2023). International export control regime is one but many UN body's efforts in facing the issue of nuclear weapons trade. Regardless, the international export control based on Security Council Resolution No. 1540 is aimed at keeping the delivery systems of weapons of mass

destruction (WMDs) out of the hands of non-state actors like terrorist and separatist organizations, which approved the creation of safety measures by state parties to stop the illegal trafficking of technology and materials connected to WMD (World Trade Organization, 2023).

As components of Weapons of Mass Destruction (WMD), international regimes also established legal structures to manage the presence of chemical and biological weapons in alignment with non-proliferation efforts, namely the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC). However, the differences with NPT are that both conventions committed to the framework of equal disarmament which is not what the NPT realistically implemented for. In light of the fact that this treaty system constitutes a tripartite agreement (between a state, the NPT, and the IAEA), balancing obligations concerning the three pillars of NPT. Therefore, in spite of the current goal of nuclear disarmament, the treaty recognizes the five nuclear-armed countries which are also the main actors in UNSC (Meier & Hunger, 2014). This made the treaty unequally applied in the international community and could potentially lead to the abuse of powers, endangering the whole community especially the NNWS. This humanitarian crisis which pinpoints the issue of state inequality which had negative impacts has been debated by many countries. Many nuclear threshold states opted not to sign due to their belief that it was unacceptable for the superpowers to possess weapons inaccessible to other states, considering it discriminatory and hypocritical (Fehl, 2014). Moreover, the legal adherence to this treaty may be questionable given that states could withdraw from this treaty anytime according to Article 10 of the NPT. Bearing in mind that one of the most dangerous existing phenomena in this world is nuclear weapons, the treaty should have been firmer and legally binding rather than being versatile, if the purpose was actually to implement peace.

In the realm of international trade, GATT believes, as stated in article 21 on Security Exception, that nothing in the agreement prevents a country from acting exclusively to maintain global peace and stability. In 2018, the UN Human Rights Council adopted a general comment on Article 6 of the ICCPR. It emphasizes that possessing and using nuclear weapons breaches the most fundamental human right which is the right to life. The general comment, specifically in Paragraph 66, General Comment on Article 6 of the International Covenant on Civil and Political Rights (2019) also calls on all states to take measures to stop the large-scale production of weapons of mass destruction, including nuclear weapons. Mass production could be a starting

point as well for countries to establish nuclear weapons business between states. The fate of humanity may be a playground for those who have power in nuclear weapons arsenals.

The subject matter of nuclear weapon trade is equally ambiguous, as proven by the lingering question marks on the state's legal connection in this treaty. NPT does not explicitly prohibit state actors from conducting nuclear weapon trade. However, article 1 of the NPT does place considerable constraints on both the transfer and receipt of nuclear weapons and related materials. Article 3 also blocks the NNWS from acquiring nuclear weapon components. NPT's flexibility permits countries to be recognized as Nuclear Weapon States (NWS) without requiring their formal adherence to the treaty. This allowance hasn't prevented non-state parties, including nuclear-capable nations like India, Pakistan, and Israel, from pursuing nuclear energy for weaponization. India's 1974 nuclear test instilled fear globally, leading to the establishment of the London Club, or Nuclear Suppliers Group (NSG), and the formulation of Nuclear Transfer Guidelines aimed at curbing nuclear technology misuse (Strulak, 1993).

Export limitations and safeguards, which are fundamental principles, ought to apply to nuclear transfers intended for peaceful purposes to both non-nuclear-weapon states and states that are subject to retransfer controls. In this regard, the suppliers established the 'trigger list' as a safeguarding measures. The Consolidated Trigger List, containing recommendations for nuclear transfers, delineates aspects such as physical security, safeguards, specialized controls on sensitive exports, unique arrangements for exporting enrichment facilities, limitations on materials usable for nuclear weapons, regulations on retransfers, and auxiliary activities. This guideline focuses on ensuring the trade market of nuclear technology is used only for peaceful purposes, especially for NNWS. It highly requires a confirmation with governments and IAEA in its implementation, as stated on Paragraph 6 of the provision.

The NSG, in alignment with export control safeguards, recommended expanding its scope beyond state practices to include the actions of non-state entities. Consequently, suppliers have been considering protocols for transferring certain equipment, materials, software, and pertinent technology. These transfers aim to prevent nuclear weapon proliferation, unsafe nuclear fuel-cycle activities, and nuclear terrorism acts. As a result, the Guidelines for Transfers of Nuclear-Related Dual-Use Equipment, Materials, Software, and Related Technology have been established to govern the transfer of such items with nuclear implications. These guidelines represent

the second set of NSG's agreed-upon measures aimed at thwarting illicit activities involving nuclear technology.

Nuclear weapon trading either illicitly or openly, has the danger of threatening human lives in many perspectives, mainly in humanitarian aspects. Not to mention the immense effect it would have on the natural environment and living beings. Should it be a moral story, nuclear weapons never make it to international trading with the justification of free-trade principle. The impacts it had on Hiroshima-Nagasaki, CNPP, Tsar-Bomba victims should've made state leaders realize that disproportionate killings and environmental destruction are never lawful. It is needed to emphasize how dangerous it is to maintain nuclear weapons even as a main solution of self-defense. International humanitarian law contradicts the pertaining of nuclear energy into weapons, moreover owning it, justifying the NFU policy. There is no guarantee nuclear weapons would be used for peaceful purposes, instead it symbolizes force of power. For whatever threats in this universe exists, nuclear weapons were never the option.

2. International Atomic Energy Agency's Capacity over the Nuclear Weapons Trade

Ever since nuclear weapons became an eye-catching object for the international community, an agency was established to straighten out the crooked. The International Atomic Energy Agency (IAEA) is crucial in preventing nuclear weapon proliferation rather than promoting their trade, as clearly outlined in Article 3 (1) of the Statute of IAEA. Its primary responsibility is to promote the peaceful use of nuclear technology and implement measures to prevent the misuse of nuclear materials for military purposes, such as weaponization. Despite assertions by numerous nuclear weapon states (NWS) that their arsenal is solely for national defense, the eventual use of these weapons will inevitably result in devastating consequences.

IAEA is the legislator in the framework of safeguarding measures for states who established, establish, and are more likely to establish a nuclear energy. All safeguards agreements require governments to give the IAEA with design information (DI) for safeguarded facilities, which the IAEA can then verify (DIV). The agreements include a three-tiered inspection methodology: ad hoc inspections (prior to typical inspection arrangements), routine inspections, and special inspections. The inaugural IAEA safeguard document, "Safeguards Agreements based on The Agency's Safeguards System 1965 (INFCIRC/66/Rev.2)," grants the IAEA legal access to individuals, sites, and data pertinent to its mission. This document differs from its successor, "The

Structure and Content of Agreements Between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons 1972 (INFCIRC/153) Corr.)," which necessitates the involvement of Non-Nuclear Weapon States (NNWS) in these safeguard agreements. These types of agreements restrict routine inspections to specific locations inside subsidiary arrangements. However, this restriction is not applicable to ad hoc or special inspections (Rookwood, 2013).

NWS are obliged to consult for thorough instructions in whether the quantity of nuclear being possessed in a state doesn't exceed the safeguarding measurement, and to ensure it's for peaceful purposes. In cases of state noncompliance, the IAEA may report to the Board of Governors (BOG), the UNSC, and the UN. A negotiation may occur following a country's report of noncompliance. If the negotiations fail, the proceedings may continue to the International Court of Justice, this procedure is in accordance with Article 17 (A) of the Statute of IAEA. IAEA's function in terms of supervising and consulting could be seen to be exact. In enforcing peaceful use for nuclear energy, IAEA successfully concluded 180 countries agreeing to open their nuclear facilities and materials to regular inspections and monitoring.

However, during the negotiation of safeguarding measures, the Board of Governors (BOG) makes reference to the guidelines outlined in INFCIRC/153 (Corr.). It's important to note that this document lacks additional regulations pertaining to provisions that generally mandate the application of safeguards as a condition for the re-transfer of safeguarded items. Such requirements are explicitly stated in Article 2 of the NPT. While this regulation does not encompass specific provisions for the application of safeguards during re-transfer, it does include a clause mandating notification to the International Atomic Energy Agency (IAEA) if safeguards will not be implemented on nuclear material in the importing State. This provision is specifically designed to address transfers to Nuclear-Weapon States (NWSs) (Rookwood, 2013). In simpler terms, NWS aren't obligated to be under IAEA safeguards, even though the agency wants to know if non-safeguarded materials are ending up there. Departing from this idea, it is not mandatory for NWS to apply IAEA's safeguards, hence IAEA doesn't have any jurisdiction to take action against nuclear weapon trading between NWS. It can be concluded IAEA has no mandatory function either to supervise or to prohibit nuclear weapon trading between NWS.

The absence of mandatory regulation can be perceived as a potential proliferation loophole conducted between states with the object of nuclear weapons. Nevermind states, nuclear weapons might also be obtained in an illegal way, such as nuclear

smuggling which poses a significant concern. Nuclear smuggling incidents have been recorded from central Europe to Russia's Pacific coast. Some stocks in security are being enhanced, but economic and political instability negatively impact morale. Hundreds of instances during the last five years indicate that the illegal traffic in uranium and plutonium could be a serious problem (Williams & Woessner, 1996).

In October 1993, Istanbul police seized 2.5 kg of uranium 238, leading to the arrest of four Turkish businessmen and four alleged Iranian secret service officers. A Munich magazine later hinted that the uranium might have reached Turkey through Germany. One of the detained Turks, a former professor involved in antiquities smuggling, claimed that accomplices transported the uranium to Istanbul via a Cessna from Hartenholm, a private airstrip near Hamburg run by Iranian arms dealers. Regrettably, there is inadequate collaboration between international institutions possessing nuclear expertise and those tasked with preventing illegal trade. According to its mandate, IAEA is not compatible in engaging in such an investigation (Williams & Woessner, 1996). Actually, there is no single article in the IAEA Statute or agreements that explicitly prohibits illicit affairs "investigation." However, constraints on the IAEA's operations stem from a blend of factors such as national sovereignty, confidentiality, and the precise terms of its agreements with member states. This issue becomes a challenge in the non-proliferation regime which proves the enormous concern the world should take to consider in creating an explicit and binding international regulation.

The nuclear kleptos, both state and non-state entities, benefited tacitly from this legal loophole in their operations. Smugglers employ a range of strategies, from straightforward to extremely dishonest plans, to obtain goods. These tactics could be either legal or illegal. In a typical procurement scenario, a supplier is deceived into believing that the ultimate customer is a civilian, non-nuclear entity, while a nuclear program or its affiliates directly place an order with them (Albright et.al., 2013). Iran is frequently suspected of seeking nuclear weapons. As per the IAEA, it is currently engaged in regular smuggling operations to advance its sanctioned nuclear programs. These activities were reportedly undertaken until at least 2004 to support its clandestine nuclear weapons endeavors (Albright & Walrond, 2009).

The scope of IAEA in some way could be seen as gray and inconsistent. The disharmonies between NPT's substance and IAEA functions in safeguarding lies in the inconsistency in Article 3 and 4 of the NPT. Article 3 mandates that any suspected nuclear activity requires the implementation of IAEA safeguards on all fissionable

material in Non-Nuclear Weapons States (NNWS), irrespective of its origin. The essence of this substance ensures transparency and verification of peaceful nuclear activities. Article 4, on the other hand, acknowledges NNWS's right to advance nuclear energy research, production, and use for peaceful purposes. This idea creates space for nuclear activities within NPT obligations (Zarate, 2008). Here's the thing, every provision of the treaty may be interpreted variously by state-parties either narrowly or broadly. According to the Vienna Convention on the Law of the Treaties (VCLT), more known as international law of treaties, highlighted the significance of utilizing a textualist approach to read a treaty's content in depth, concentrating on the terms' common meaning in relation to the treaty's goals and context, and recourse to "supplementary means" like negotiation history (*travaux préparatoires*) when the textual approach leaves the meaning ambiguous or unreasonable. Applying the provision to analyze Article 4 could be seen to be using internationally accepted principles of interpretation and considering historical context when interpreting an ambiguous treaty provision like Article IV of the NPT. This ultimately influences the balance between nuclear development peacefully and non-proliferation goals. Determining the true meaning of Article IV has significant implications for non-proliferation efforts. An unfettered right to nuclear activities could weaken these efforts by allowing NNWS to engage in activities closer to weapons development. Conversely, a more restricted interpretation would emphasize peaceful uses and strengthen safeguards against proliferation.

Explicitly and narrowly, the regulation restricts NNWS activities, making IAEA safeguards more critical in confirming compliance with Articles I and II (prohibiting proliferation and promoting peaceful uses). This strengthens non-proliferation by setting stricter boundaries for nuclear activities. However, the existing space due the cause of article 4 NPT allows NNWS significant leeway in pursuing nuclear activities, potentially limiting the effectiveness of IAEA safeguards. The possibility that activities related to the development of weapons could be interpreted broadly could undermine efforts towards non-proliferation. When interpreted more broadly, the primary role of the IAEA in establishing safeguards is comparable to a static ornamental statue in international law. In other words, it might exist only for the sake of formalities under the label of pursuing global security. Thus, the legal standing of IAEA in this phenomenon remains gray, if NPT itself indirectly provided loopholes to compromise the function of IAEA.

IAEA doesn't have the mandate to prohibit nuclear weapons, moreover relating to the trade of it. With the monopoly characteristics in the NPT over the NNS, IAEA might not have the chance to be in charge. In other words, as long as the ownership of nuclear weapons remains granted, those NNS can potentially abuse it on other states, more likely those with long-time conflicts. IAEA might not have a place in such an issue (Suleman, 2008). Even though IAEA's place is crucial in nuclear non-proliferation, it does not have the mandate to firmly impose a legal binding sanction to violating countries. However, IAEA's main characteristic is technical" or "non-political, as it focuses on verifying compliance with safeguards agreements and providing technical assistance. Besides, stated firmly in the Article 79 of the UN Charter, the international law acknowledges only UNSC having the mandate to directly impose sanctions. In such a position, IAEA can recommend or request that specific measures be taken in response to non-compliance, but these recommendations are not binding on the UNSC as its main characteristic is non-political. Yes, IAEA is one of the regulatory bodies, but its outputs are not formally binding towards member states rather than as guidelines. IAEA's regulations are individual safeguards agreements negotiated between the IAEA and each member state. These agreements stipulate the specific obligations and commitments for implementing safeguards measures.

The IAEA is committed to formulating robust regulations and guidelines aimed at safeguarding communities and the environment from nuclear weapons effects such as radiation issues stemming from nuclear energy. IAEA is already an established body to promote peaceful use of nuclear energy, therefore it is their place to take charge in supervising global nuclear traffic. Its jurisdiction extends beyond the nuclear sector, encompassing all industries associated with or impacted by the hazards of radiation (Al Nabhani & Khan, 2020). However, without a strong will from the international community to emphasize the importance of global nuclear security, nuclear non-proliferation will be unable to proceed properly. This burden extends to other major powers, especially those possessing nuclear weapons. All major powers, including those with nuclear arsenals, must actively participate in solving the collective challenges they helped create. Nuclear-weapon states are no longer just part of the problem; they must become part of the solution (Huisken, 2023).

Hence why in this case, countries with powers of nuclear arsenals should provide a solution in regards to nuclear weapon trading. In ensuring peaceful purposes of nuclear usage, it must be in accordance with strengthening the mandate of the supervisory body to legislate a legally binding international regulation. It would

need strong wills and solidarity to prevent proliferation of nuclear energy for humanity. Countries with strong influence and power, such as those who have plenty of nuclear arsenals might be the one who can shape the international community into unity, for their seat in the United Nations was for many states to look up to, or the so-called producer of the domino effects. The nuclear non-proliferation would come to a halt if there's no firm action from the international community. With the strong will of countries and equal interests, IAEA as the frontline shield of nuclear activities must exist as a legislative body to be able to stop the spread of nuclear weapons.

Conclusion

Since World War II, nuclear weapons have been widely used, especially during the Cold War, prompting global recognition of their devastating effects. Their mere presence poses significant risks to both human life and the environment, with potential consequences including crop failures and environmental devastation. Additionally, nuclear radiation can cause long-term harm to towns and genetic damage. Indeed, nuclear weapons indiscriminate nature and inevitable massive casualties violates principles of humanitarian law, yet they cannot be effectively controlled. Nuclear weapons contradict international humanitarian law, making their trade inherently dangerous. The International Atomic Energy Agency (IAEA) establishes safeguards for nuclear energy states, but nuclear weapon states (NWS) aren't required to follow them, limiting their effectiveness. While the NPT restricts non-nuclear weapon states (NNWS), its broad interpretation allows significant flexibility, potentially undermining IAEA efforts. The IAEA's role in prohibiting nuclear weapons or regulating their trade is constrained by the NPT's monopoly over nuclear-armed states, limiting its influence, especially in conflicts. While crucial for non-proliferation, the IAEA lacks the authority to impose binding sanctions, with enforcement primarily under the UNSC. Therefore, while IAEA regulations are important, they're not legally binding, as each member state negotiates separate safeguards agreements.

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