Lex Humana, v. 16, n. 3, 2024, ISSN 2175-0947

LINGUISTICS OF THE INTERNATIONAL LAW OF NUCLEAR PHYSICS ON SYNONYMS WITH THE APPROACH OF CHILDREN'S PHYSICAL AND MENTAL HEALTH

LINGUÍSTICA DO DIREITO INTERNACIONAL DA FÍSICA NUCLEAR SOBRE SINÔNIMOS COM A ABORDAGEM DA SAÚDE FÍSICA E MENTAL DA CRIANÇA

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Received: 17 March 2024
Accepted: 15 July 2024
Published: 01 September 2024

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Abstract: In this article, an attempt has been made to homogenize the three sciences of legal linguistics, nuclear physics and international nuclear law with each other so that the different layers of pure linguistics can be applied with the properties of atoms and sub-particles that make up it. This topic can be used optimally in the direction of abstract support for children's rights, and radiolanguage is no exception to this rule, which can bring peace and stability in international relations, and on the other hand, language bring violence and jeopardizing the safety of children all over the world. If we can use the radioactive gravity force in the nuclear reactor of our mind according to international legal treaties to maintain the health of children's physical and mental dimensions, we will definitely see favorable results in this field, which is explained in the relevant article. International treaties play an important role in bringing this process to the fore, and one of the most important treaties in this context is the Treaty on the Prohibition of Nuclear Weapons, which can be linked to legal linguistics by interpreting the provisions of this treaty. Using the present research, we should reach the core of legal linguistics of nuclear physics in order to protect children's rights. The study method is valid library and reference databases.

Keywords: Legal linguistics. Nuclear physics. International nuclear law. Children's rights. Radiolanguage.

Resumo: Neste artigo, foi feita uma tentativa de homogeneizar as três ciências da linguística jurídica, da física nuclear e do direito nuclear internacional entre si, de modo que as diferentes camadas da linguística pura possam ser aplicadas com as propriedades dos átomos e das subpartículas que a compõem. Esse tópico pode ser usado de forma otimizada na direção do apoio abstrato aos direitos

das crianças, e a radiolinguagem não é exceção a essa regra, que pode trazer paz e estabilidade nas relações internacionais e, por outro lado, a linguagem traz violência e põe em risco a segurança das crianças em todo o mundo. Se pudermos usar a força gravitacional radioativa no reator nuclear de nossa mente, de acordo com os tratados legais internacionais, para manter a saúde das dimensões física e mental das crianças, com certeza veremos resultados favoráveis nesse campo, o que é explicado no artigo relevante. Os tratados internacionais desempenham um papel importante para trazer esse processo à tona, e um dos tratados mais importantes nesse contexto é o Tratado sobre a Proibição de Armas Nucleares, que pode ser vinculado à linguística jurídica por meio da interpretação das disposições desse tratado. Com a presente pesquisa, devemos chegar ao núcleo da linguística jurídica da física nuclear para proteger os direitos das crianças. O método de estudo é uma biblioteca válida e bancos de dados de referência.

Palavras-chave: Linguística jurídica. Física nuclear. Direito nuclear internacional. Direitos da criança. Radiolinguagem.

1. Introduction

Atomic Structure

Atoms are made up of particles (Mahaffey, 2017) called protons, neutrons, and electrons, which are responsible for the mass and charge of atoms.

Key Takeaways

- An atom is composed of two regions: the nucleus, which is in the center of the atom and contains protons and neutrons, and the outer region of the atom, which holds its electrons in orbit around the nucleus.
- Protons and neutrons have approximately the same mass, about 1.67×10^{-24} grams, which scientists define as (amu[1]) or one Dalton.
- Each electron has a negative charge (-1) equal to the positive charge of a proton (+1).
- Neutrons are uncharged particles found within the nucleus (Mahaffey, 2017).

Key Terms

- **atom**: The smallest possible amount of matter which still retains its identity as a chemical element, consisting of a nucleus surrounded by electrons.

[1] One atomic mass unit

- **proton**: Positively charged subatomic particle forming part of the nucleus of an atom and determining the atomic number of an element. It weighs 1 amu.
- **neutron**: A subatomic particle forming part of the nucleus of an atom. It has no charge. It is equal in mass to a proton or it weighs 1 amu (Mahaffey, 2017).

An atom (Mahaffey, 2017) is the smallest unit of matter that retains all of the chemical properties of an element. Atoms combine to form molecules, which then interact to form solids, gases, or liquids. For example, water is composed of hydrogen and oxygen atoms that have combined to form water molecules. Many biological processes are devoted to reassembling molecules into different, more useful molecules.

Atomic Particles

Atoms (Mahaffey, 2017) consist of three basic particles: protons, electrons, and neutrons. The nucleus (center) of the atom contains the protons (positively charged) and the neutrons (no charge). The outermost regions of the atom are called electron shells and contain the electrons (negatively charged). Atoms have different properties based on the arrangement and number of their basic particles. The hydrogen atom (H) contains only one proton, one electron, and no neutrons. This can be determined using the atomic number and the mass number of the element (see the concept on atomic numbers and mass numbers).

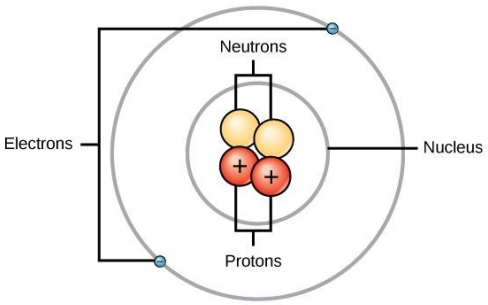

Fig. 1- Elements, such as helium, depicted here, are made up of atoms. Atoms are made up of protons and neutrons located within the nucleus, with electrons in orbitals surrounding the nucleus.

Atomic Mass

Protons and neutrons have approximately the same mass, about 1.67×10^{-24} grams. Scientists define this amount of mass as one atomic mass unit (amu) or one Dalton. Although similar in mass, protons are positively charged, while neutrons have no charge. Therefore, the number of neutrons in an atom contributes significantly to its mass, but not to its charge (Mahaffey, 2017).

Protons, Neutrons, and Electrons			
	Charge	**Mass (amu)**	**Location**
Proton	+1	1	nucleus
Neutron	0	1	nucleus
Electron	–1	0	orbitals

Fig. 2- Both protons and neutrons have a mass of 1 amu and are found in the nucleus. However, protons have a charge of +1, and neutrons are uncharged. Electrons have a mass of approximately 0 amu, orbit the nucleus, and have a charge of -1.

Electrons are much smaller in mass than protons, weighing only 9.11×10^{-28} grams, or about 1/1800 of an atomic mass unit. Therefore, they do not contribute much to an element's overall atomic mass. When considering atomic mass, it is customary to ignore the mass of any electrons and calculate the atom's mass based on the number of protons and neutrons alone (Mahaffey, 2017).

Electrons (Mahaffey, 2017) contribute greatly to the atom's charge, as each electron has a negative charge equal to the positive charge of a proton. Scientists define these charges as "+1" and "-1. " In an uncharged, neutral atom, the number of electrons orbiting the nucleus is equal to the number of protons inside the nucleus. In these atoms, the positive and negative charges cancel each other out, leading to an atom with no net charge.

Volume of Atoms

Accounting forthe sizes of protons, neutrons, and electrons, most of the volume of an atom—greater than 99 percent—is, in fact, empty space. Despite all this empty space, solid objects do not just pass through one another. The electrons that surround all atoms are negatively charged and cause atoms to repel one another, preventing atoms from occupying the same space. These intermolecular forces prevent you from falling through an object like your chair (Mahaffey, 2017).

Atomic Number and Mass Number

The atomic number (Mahaffey, 2017) is the number of protons in an element, while the mass number is the number of protons plus the number of neutrons.

Key Takeaways

Key Points

- Neutral atoms of each element contain an equal number of protons and electrons.
- The number of protons determines an element's atomic number and is used to distinguish one element from another.
- The number of neutrons is variable, resulting in isotopes, which are different forms of the same atom that vary only in the number of neutrons they possess.
- Together, the number of protons and the number of neutrons determine an element's mass number.
- Since an element's isotopes have slightly different mass numbers, the atomic mass is calculated by obtaining the mean of the mass numbers for its isotopes (Mahaffey, 2017).

Key Terms

- **mass number**: The sum of the number of protons and the number of neutrons in an atom.
- **atomic number**: The number of protons in an atom.
- **atomic mass**: The average mass of an atom, taking into account all its naturally occurring isotopes.

Atomic Number

Neutral atoms (Mahaffey, 2017)of an elementcontainan equal number of protons and electrons. The number of protons determines an element's atomic number (Z) and distinguishes one element from another. For example, carbon's atomic number (Z) is 6 because it has 6 protons. The number of neutrons can vary to produce isotopes, which are atoms of the same element that have different numbers of neutrons. The number of

electrons can also be different in atoms of the same element, thus producing ions (charged atoms). For instance, iron, Fe, can exist in its neutral state, or in the +2 and +3 ionic states.

Mass Number

An element's mass number (A) is the sum of the number of protons and the number of neutrons. The small contribution of mass from electrons is disregarded in calculating the mass number. This approximation of mass can be used to easily calculate how many neutrons an element has by simply subtracting the number of protons from the mass number. Protons and neutrons both weigh about one atomic mass unit (amu). Isotopes of the same element will have the same atomic number but different mass numbers (Mahaffey, 2017).

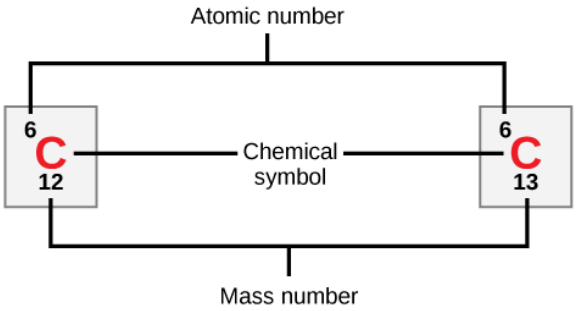

Fig.3- Carbon has an atomic number of six, and two stable isotopes with mass numbers of twelve and thirteen, respectively. Its relative atomic mass is 12.011.

Scientists determine the atomic mass by calculating the mean of the mass numbers for its naturally-occurring isotopes. Often, the resulting number contains a decimal. For example, the atomic mass of chlorine (Cl) is 35.45 amu because chlorine is composed of several isotopes, some (the majority) with an atomic mass of 35 amu (17 protons and 18 neutrons) and some with an atomic mass of 37 amu (17 protons and 20 neutrons), (Mahaffey, 2017).

Given an atomic number (Z) and mass number (A), you can find the number of protons, neutrons, and electrons in a neutral atom. For example, a lithium atom (Z=3, A=7 amu) contains three protons (found from Z), three electrons (as the number of protons is equal to the number of electrons in an atom), and four neutrons (7 – 3 = 4).

Isotopes

Isotopes are various forms of an element that have the same number of protons, but a different number of neutrons.

KEY TAKEAWAYS

Key Points

- Isotopes are atoms of the same element that contain an identical number of protons, but a different number of neutrons.
- Despite having different numbers of neutrons, isotopes of the same element have very similar physical properties.
- Some isotopes are unstable and will undergo radioactive decay to become other elements.
- The predictable half-life of different decaying isotopes allows scientists to date material based on its isotopic composition, such as with Carbon-14 dating (Mahaffey, 2017).

Key Terms

- **isotope**: Any of two or more forms of an element where the atoms have the same number of protons, but a different number of neutrons within their nuclei.
- **half-life**: The time it takes for half of the original concentration of an isotope to decay back to its more stable form.
- **radioactive isotopes**: an atom with an unstable nucleus, characterized by excess energy available that undergoes radioactive decay and creates most commonly gamma rays, alpha or beta particles.
- **radiocarbon dating**: Determining the age of an object by comparing the ratio of the 14C14C concentration found in it to the amount of 14C14C in the atmosphere (Mahaffey, 2017).

What is an Isotope?

Isotopes (Mahaffey, 2017) are various forms of an element that have the same number of protons but a different number of neutrons. Some elements, such as carbon, potassium, and uranium, have multiple naturally-occurring isotopes. Isotopes are defined first by their element and then by the sum of the protons and neutrons present.

- Carbon-12 (or ^{12}C) contains six protons, six neutrons, and six electrons; therefore, it has a mass number of 12 amu (six protons and six neutrons).

- Carbon-14 (or ^{14}C) contains six protons, eight neutrons, and six electrons; its atomic mass is 14 amu (six protons and eight neutrons).

While the mass of individual isotopes is different, their physical and chemical properties remain mostly unchanged.

Radiocarbon Dating

Carbon (Mahaffey, 2017) is normally present in the atmosphere in the form of gaseous compounds like carbon dioxide and methane. Carbon-14 (^{14}C) is a naturally-occurring radioisotope that is created from atmospheric ^{14}N (nitrogen) by the addition of a neutron and the loss of a proton, which is caused by cosmic rays. This is a continuous process so more ^{14}C is always being created in the atmosphere. Once produced, the ^{14}C often combines with the oxygen in the atmosphere to form carbon dioxide. Carbon dioxide produced in this way diffuses in the atmosphere, is dissolved in the ocean, and is incorporated by plants via photosynthesis. Animals eat the plants and, ultimately, the radiocarbon is distributed throughout the biosphere.

In living organisms, the relative amount of ^{14}C in their body is approximately equal to the concentration of ^{14}C in the atmosphere. When an organism dies, it is no longer ingesting ^{14}C, so the ratio between ^{14}C and ^{12}C will decline as ^{14}C gradually decays back to ^{14}N. This slow process, which is called beta decay, releases energy through the emission of electrons from the nucleus or positrons.

After approximately 5,730 years, half of the starting concentration of ^{14}C will have been converted back to ^{14}N. This is referred to as its half-life, or the time it takes for half of the original concentration of an isotope to decay back to its more stable form. Because the half-life of ^{14}C is long, it is used to date formerly-living objects such as old bones or wood. Comparing the ratio of the ^{14}C concentration found in an object to the amount of ^{14}C in the atmosphere, the amount of the isotope that has not yet decayed can be determined. On the basis of this amount, the age of the material can be accurately calculated, as long as the material is believed to be less than 50,000 years old. This technique is called radiocarbon dating, or carbon dating for short.

Other elements have isotopes with different half lives. For example, ^{40}K (potassium-40) has a half-life of 1.25 billion years, and ^{235}U (uranium-235) has a half-life of about 700 million years. Scientists often use these other radioactive elements to date objects that are older than 50,000 years (the limit of carbon dating). Through the use of

radiometric dating, scientists can study the age of fossils or other remains of extinct organisms.

2- Theoretical framework

The present article is written based on Fairclough's critical discourse analysis theory in three levels of description, interpretation and explanation, but the three levels are not mentioned layer by layer; Rather, the meaning of the word based on the combination of the sciences of legal linguistics and nuclear physics has been analyzed and extracted, interpretations, and the like, in accordance with the relevant diagrams and infographics. If the three levels want to be done from one level to another by mentioning the levels, from my point of view as a writer, it is considered a beginner; Therefore, the hidden concepts are hidden in the heart of the mentioned sciences, which are used in an implicit and allusion way and allusive method is because The Greek philosopher Democritus (460-370B. C.) conjectured that all things were composed of small, indivisible bits called "atoms," rendered from the Greek atomos meaning "indivisible." Democritus' atoms came in different sizes and could combine or separate and soon after This idea of tiny, indivisible bits of matter persisted until the 1800's. John Dalton (1766-1844), a great chemist, really started the modern atomic hypothesis. His atom however was like a solid billiard ball. Later, J.J. Thomson (1856-1940), discoverer of the electron, proposed what we call the "plum pudding model" of the atom. In his model, the atom was a mix of equal numbers of positive and negative charges.

The major experimental indication of the atoms' structure was Rutherford's Scattering Experiment. Ernest Rutherford (1871-1937) had been involved in studying the scattering of alpha particles by sheets of metal and mica. Some radioactive substances emit alpha particles (very massive, positively charged particles) and Rutherford thought that by studying how positive alpha particles in a beam were scattered by the atoms of a material one could infer the atom's internal structure.

Hans Geiger, Rutherford's colleague, suggested that their student Ernest Marsden look for deflections of alpha particles through very thin foils, feeling certain that large deflections would not occur. Indeed most alpha particles were scarcely deflected. But to Rutherford's amazement, Marsden found that some alpha particles came straight back after being fired at a thin gold foil.

In Rutherford's words, "It was the most incredible event that has ever happened to me in my life. It was almost as incredible as if you fired a 15-inch shell at a piece of tissue paper and it came back and hit you." The only way alpha particles could bounce directly back toward the "gun" that fired them was if the atom had a compact, positively charged core. An occasional alpha particle speeding directly toward such a core would be slowed, stopped, and rebound directly back due to electromagnetic forces. Rutherford knew from Thomson's work that atoms contained electrons. Now however, he had found the nucleus of the atom, thus proving the atom had components.

We know today that the atom consists of a tiny (10^{-14} m) nucleus containing positive charges (protons) and neutral particles (neutrons), both of which consist of more fundamental particles called quarks. Negatively-charged electrons orbit the nucleus in cloud-like volumes of space designated "orbitals" in quantum theory. Since these electron clouds (10^{-10} m) are 10 000 times larger than the radius of the nucleus, the atom is mostly empty space.

In summary, subatomic particles have been studied by different scientists during different periods of research with a specialized topic, each of whom had palyedan important part in these atomic and nuclear studies.

3- Research Questions:

The main question: How can you create a link with legal linguistics through nuclear and atomic physics?

Sub-questions:

a. What is the difference between nuclear physics and atomic physics?

b. What has been the benefit of the principles and practice of International nuclear law in the field of legal linguistics? What are the advantages and disadvantages of the relevant issue?

4- Research Hypotheses:

The main hypothesis:

This conclusion can be reached by examining the constituent particles of the atom, which are the same as the backbone of legal linguistics in terms of form and content.

Sub-hypotheses:

a. More specifically, atomic physics deals with the atom as a system consisting of a nucleus and electrons. Nuclear physics deals with the nucleus as a system consisting of nucleons (protons and neutrons). Atomic physics concerns itself with the entire atom and how the electronic configuration of electrons can change.

b.Based on the slogan of the International Nuclear Agency, which says that atoms are for peace and development, legal linguistics can be considered as an atom that fulfills the above slogan for the protection of children's health. One of the major disadvantages is that if legal linguistics cannot help to clarify the issue, the governments will use nuclear weapons for destruction and killing through nuclear fission or fusion and the advantage of that effort is in the direction of semantic use to reach lasting peace and stability.

5- Literature review

The researches that have been carried out, but not so much in relation to the topic of this article, are:

1. An article entitled Nuclear Structures in Linguistics by Richard S. Pittman in 1948:

The expression 'nuclear structures' has become, in our day, a term to conjure with; but the concept is not new in linguistics. It is mentioned or implied in contemporary discussions under the terms 'immediate constituents', 'rank', and 'endocentric phrases'; in the older literature it is referred to as 'modification', 'attribution', or 'subordination'.' An assumption of different ranks is implicit in such word-pairs as stem-affix, head-attribute, noun-adjective, substantivemodifier, verb-adverb, principal-subordinate. The purpose of this paper is not to offer a new concept for linguistic theory, but rather to codify the criteria which probably serve as the basis for most judgments of relative rank that have been tacitly invoked in linguistic analysis.

2.A book entitled Pointing at the Past: From Formula to Performance in Homeric Poetics by Bakker, E. in 2005 specially in the filed of Chapter 1 about Peripheral and Nuclear Semantics:

Peripheral elements are semantically neutral in that they may just be present or absent without any difference for the intended meaning of the combination nucleus-periphery and Nuclear semantics is It targets the original meaning and meaning of the writer or author or translator. Epic is concerned with the past. It depicts heroes that are

larger than life and accomplish their exploits in a bygone age outside the reach of ordinary mortals. Often, and certainly in the case of the Homeric tradition, epic's very language is a representation of the past, in the form of vocabulary, syntax, and grammar that have long vanished from the poet's everyday vernacular. Epic not only remembers the heroic past, but also its own, linguistic, past. The Homeric poems, like most epics that are amenable to literary appreciation or analysis, are texts that have attained canonical status in a literary tradition. Such a glorious survival is itself an epic accomplishment, which we may attribute to the poems' literary quality and continuous capability to repay careful reading. Yet written reception, essential and inevitable as it is, may blind us to certain features of these erstwhile oral compositions whose audience were listeners at a performance. Reading the *Iliad* and the *Odyssey*, studying them as texts, may alter the peculiar relation these poems once had with the past. It turns into a reified memory of the remote past what once was deliberate activity in the present. And it shifts the burden from the *act* of reference to the *object* of reference, from the present to the past.

3. An article entitledDirective 2009/71/Euratom: the losing battle against discrimination and protection of sovereignty by Sousa Ferro, M. in 2009:

This paper looks at the recently adopted framework for nuclear safety in the European Union (EU) – Directive 2009/71/Euratom, both in terms of its legislative history and of the outcome's usefulness and characteristics.

4. An article entitledEU normative framework and standards of radiological protection in medicine by Sukhova, A. in 2009:

This paper examines the normative framework of the European Union (EU) and member states in the field of radioprotection of individuals undergoing medical exposure, in the light of harmonisation on the basis of the European Atomic Energy Community (EAEC or EURATOM) directives and enforcement at the national level. It discusses to what extent medical standards in radioprotection vary in member states, and analyses the factors determining differences in national laws and regulations adopted in this area. Bearing in mind the emerging challenges for medical practices in radiology and nuclear medicine, on the one hand, and the implicit limitations of the direct regulation, on the other hand, we will argue that the law can stimulate self-organisation within the healthcare environment and induce the operators on the floor to self-reflective performance, in order to enhance the quality of services and to minimise radiological risks.

5.An article entitled Regulations and standards for the measurement of performance and management of ageing of I&C systems of nuclear power plants by Hashemian, H.M. in 2009:

Instrumentation and Control (I&C) equipment is vital to the safety and viability of nuclear power plants. This equipment must provide accurate and timely measurements of plant control and safety systems to ensure efficient operation and guard against mishaps. Given this, numerous regulations, standards and guidelines have been devised to formulate requirements and establish maintenance methods to verify the performance of this equipment. Examples of these requirements and the test methods to meet them are summarised in this paper.

6. An article entitled Role of the Indian political system in shaping India's nuclear policy by Pillai Rajagopalan, R.; Purushothaman, U. in 2012:

This paper attempts to examine the role played by various actors in the Indian political system in shaping the nuclear policy in India. The focus will be on the role of the parliament, political parties and prominent civil society groups in influencing the 'nuclear debate' and framing policy. The Indo-US civil nuclear deal and the Nuclear Liability Law are taken as case studies. While parliament had no direct say in the ratification of the nuclear deal, the government had to face a no-confidence motion in its aftermath. Similarly, the nuclear liability law was passed only after the government agreed to the demands of the parliament to hike the liability cap and also included 18 amendments suggested by the House. In this paper, we propose to delineate the capacity and influence of the key political actors in India in shaping the country's nuclear policy.

7. An article entitled A dangerous recourse? A critical relook at Section 17 of the Civil Liability for Nuclear Damage Act, 2010 by Sengupta, A. ;Ambast, S. in 2012:

The newly created regime for civil liability for nuclear damage in India has been a fertile source of controversy. Section 17 of the Civil Liability for Nuclear Damage Act, 2010 and Rule 24 of the Civil Liability for Nuclear Damage Rules, 2011 are of particular interest, as they provide for the right of recourse, i.e. the extent to which suppliers of nuclear material can be held liable for damages caused due to a nuclear accident in India. This paper analyses the complex legal architecture relating to the right of recourse in India in the context of the Constitution, Supreme Court jurisprudence, international and

comparative law, and prevailing policy rationales. On the basis of this analysis, it suggests appropriate reform to the Indian law to ensure that its provisions are sound in principle and effective in facilitating the safe, affordable and efficient supply of nuclear energy in India.

8.An article entitled Regulatory independence and accountability: a survey of international nuclear regulatory regimes by Timothy P. Matthews; Esther K. Park in 2013:

As the government of India considers development of an independent regulator for civil nuclear power, examples from other nations around the world, including those with established civil nuclear programmes and those now developing new nuclear, provide interesting insights and lessons to be learned. This paper compares the organisational structure of the Indian governmental agency, the Nuclear Safety Regulatory Authority, proposed in Bill No. 76 of 2011, with the organisational structures of independent national regulators of civil nuclear power programmes from the USA, the UK, Japan, the People's Republic of China and the United Arab Emirates. The paper discusses where in the government the agency is housed, sources of authority, sources of funding, regulatory powers and functional independence, both from the government agency charged with developing civil nuclear power and from nuclear facility operators.

9.An article entitled A step towards establishing nuclear safety infrastructure for introduction of nuclear power programme in Bangladesh by Alak Chakraborty,K.M. ; Rahman, R. ; Akbar, M. S. in 2013:

The existing regulatory infrastructure for nuclear power of Bangladesh consists of Nuclear Safety and Radiation Control (NSRC) Act, 1993 and NSRC Rules 1997, which was established based on the IAEA BSS 115, overlooking other Safety Standards. Bangladesh made a knowledgeable decision regarding implementation of NPP. Accordingly, the country is committed to establish an independent regulatory body with appropriate resources and empowerment to regulate the safety and security of nuclear installations. A draft 'Bangladesh Atomic Energy Regulatory (BAER) Act' with input from the IAEA and vendor countries is already under consideration for approval of the government. The draft BAER Act establishes an independent 'Bangladesh Atomic Energy Regulatory Authority' for the regulation of nuclear safety, radiation protection, transportation and waste safety

and the civil liability for nuclear damage. The important elements of the BAER Act have been analysed in this paper, and some critical issues are identified.

10.An article entitledPublic awareness and stakeholder engagement in India's nuclear energy regulatory process by Mlynarkiewicz, L. D. in 2013:

The accident at the Fukushima Daiichi Nuclear Power Plant has shown that the generation of nuclear energy involves an inherent risk of failure irrespective of undertaken precautions and safety measures. Therefore, members of the public - the principal stakeholders - shall be provided with significant opportunities for their engagement in the nuclear regulatory process. In general, openness for public participation not only strengthens the legitimacy of regulatory decisions, but it also establishes trust and understanding in reference to policy-makers' activities. This paper analyses public involvement system in the nuclear regulatory process in India. In reference to the best international practices settled by the IAEA and national authorities like the US Nuclear Regulatory Commission, the author recommends certain solutions for the improvement of the public participation mechanism regarding the Indian nuclear decision-making process.

6- Methodology

The data collection methods used in the current research methodology are: observations, documents and case studies, the choice of data collection method depends on the general goals and objectives of the research and applications and resource limitations. In addition to the above-mentioned cases, it should be noted that the qualitative research method from the perspective of descriptiveness of the cases of legal linguistics of international law is core, and from the quantitative point of view, the combination of legal linguistics with coded elements of chemical science is the focus of the author of the article, and the combined method in This article integrates quantity and quality in order to achieve a desired result and through that two fields can be connected. In the qualitative research method section; Qualitative content analysis is considered and modeling of chemical structural equations is used in it. In addition, the software for analyzing chemical data and nuclear legal linguistics is KingDraw App software.

The method of collecting information in this article is library and the research method is correlation-descriptive in particular.

In this article, I have written the following news: legal linguistics alone is neutral to some extent if it does not have an impact on nuclear physics and international nuclear law,

which can lead to its inapplicability. Science should be relevant and no results will be obtained. As a result, the variables used in this research are:

1- The effect of legal linguistics = independent variable

2- Nuclear physics and international nuclear law = dependent variable

3- Linking between these three scientific aspects = moderator variable

4- Inconclusive = intervening variable

Nuclear Energy

Nuclear Fusion

Nuclear energy (Weisskopf, 1952) is a form of energy released from the nucleus, the core of atoms, made up of protons and neutrons. This source of energy can be produced in two ways: fission – when nuclei of atoms split into several parts – or fusion – when nuclei fuse together. Five hundred years ago, the Aztec civilization in today's Mexico believed that the sun and all its power was sustained by blood from human sacrifice. Today, we know that the sun, along with all other stars, is powered by a reaction called nuclear fusion. If nuclear fusion can be replicated on earth, it could provide virtually limitless clean, safe and affordable energy to meet the world's energy demand.

So how exactly does nuclear fusion work? Simply put, nuclear fusion is the process by which two light atomic nuclei combine to form a single heavier one while releasing massive amounts of energy.

Fusion reactions take place in a state of matter called plasma — a hot, charged gas made of positive ions and free-moving electrons that has unique properties distinct from solids, liquids and gases.

To fuse on our sun, nuclei need to collide with each other at very high temperatures, exceeding ten million degrees Celsius, to enable them to overcome their mutual electrical repulsion. Once the nuclei overcome this repulsion and come within a very close range of each other, the attractive nuclear force between them will outweigh the electrical repulsion and allow them to fuse. For this to happen, the nuclei must be confined within a small space to increase the chances of collision. In the sun, the extreme pressure produced by its immense gravity create the conditions for fusion to happen.The amount of energy produced from fusion is very large — four times as much as nuclear fission reactions — and fusion reactions can be the basis of future fusion power reactors. Plans call for first-generation fusion reactors to use a mixture of deuterium and tritium — heavy

types of hydrogen. In theory, with just a few grams of these reactants, it is possible to produce a terajoule of energy, which is approximately the energy one person in a developed country needs over sixty years.

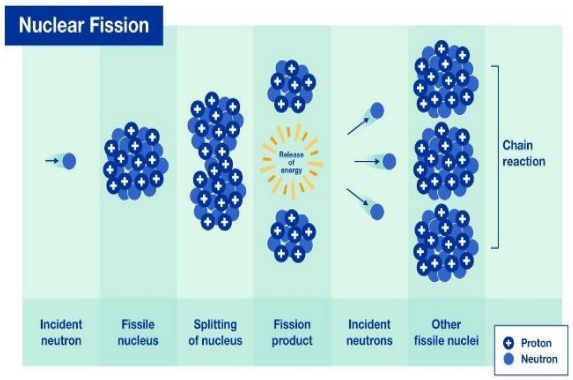

Fig. 4- The nuclear energy harnessed around the world today to produce electricity is through nuclear fission, while technology to generate electricity from fusion is at the [2]R&D phase (Weisskopf, 1952).

Nuclear Fission

Nuclear fission (Weisskopf, 1952) is a reaction where the nucleus of an atom splits into two or more smaller nuclei, while releasing energy.

For instance, when hit by a neutron, the nucleus of an atom of uranium-235 splits into two smaller nuclei, for example a barium nucleus and a krypton nucleus and two or three neutrons. These extra neutrons will hit other surrounding uranium-235 atoms, which will also split and generate additional neutrons in a multiplying effect, thus generating a chain reaction in a fraction of a second (Weisskopf, 1952).

Each time the reaction occurs, there is a release of energy in the form of heat and radiation. The heat can be converted into electricity in a nuclear power plant, similarly to how heat from fossil fuels such as coal, gas and oil is used to generate electricity (Weisskopf, 1952).

[2] Research and Development

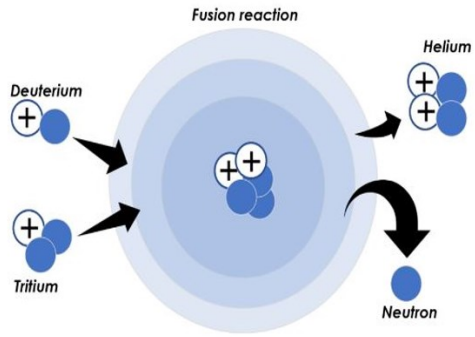

Fig. 5- Nuclear Fission Process

Advantages of Nuclear Fusion

Fusion (Weisskopf, 1952) is capable of powering the whole world at a very low cost since there is virtually limitless fuel available that can be used to make electricity. There is a lot of energy released in fusion rather than fission, therefore it would be more profitable if it is set up. Also when producing nuclear fusion energy, there is hardly any waste. As a result of this, there would be no money wasted in disposing and clearing of the wastes produced by the reaction.

Thus, Fusion is capable of powering the entire world at a much low cost, as compared to power sources used nowadays. It is a clean energy source that means no greenhouse gases and emitting only helium as exhaust. It is easier to stop nuclear fusion reactions as compared to fission reactions since there is no chain reaction in fusion (Weisskopf, 1952).

Disadvantages of Nuclear Fusion

It would be very expensive to build a power plant to produce energy because Nuclear fusion can only occur between 14999726.85 degree celsius to 9999726.85 degree Celsius. (Or 10-15 million kelvin) Thus, there are no materials that can cope with 10-15 million K and also since it is a non-renewable energy. There can also be radioactive wastes (Weisskopf, 1952).

Investigation of fusion from the perspective of legal linguistics

Law is the cornerstone of any well-functioning society (Bingham, 2010), serving as the framework that governs human behavior, resolves disputes, and upholds justice.

Maintaining Order and Stability

Imagine a world without laws — where chaos reigns and disputes are resolved through sheer force. Laws provide a structured environment that prevents anarchy and ensures peaceful coexistence. By establishing rules that govern behavior, the law acts as a safeguard against conflicts and the potential breakdown of societal order (Bingham, 2010).

Maintaining Order and Preventing Anarchy, Upholding Justice and Fairness

Laws embody the principles of justice and fairness. They define the boundaries of acceptable conduct and provide mechanisms to address wrongdoings. Through due process and the legal system, individuals are given a fair chance to present their cases and seek redress for grievances. The law ensures that justice is not only served but also seen to be served, promoting a sense of trust and accountability within society (Bingham, 2010).

At its core, the primary function of law is to maintain order within a society. Laws establish rules and boundaries that guide individual conduct and interactions. Without law, chaos and anarchy could prevail, leading to a breakdown of social structures and jeopardizing the safety and well-being of individuals (Bingham, 2010).

Protecting Individual Rights & Freedoms

Laws are the bedrock of individual rights (Bingham, 2010). They grant people the freedom to express themselves, practice their beliefs, and enjoy basic liberties without fear of infringement. Legal protections against discrimination, unlawful detention, and privacy violations ensure that each person's rights are safeguarded, contributing to a just and inclusive society.

Law plays a crucial role in protecting the rights and freedoms of individuals(Bingham, 2010). Legal frameworks ensure that basic human rights, such as freedom of speech, religion, and expression, are upheld and respected. Laws also guard against discrimination, ensuring that everyone is treated fairly and equitably.

Regulating Commerce and Relationships & Ensuring Justice and Fairness

In a complex and interconnected world, laws regulate various aspects of commerce and relationships. Contract laws, property laws, and business regulations provide the structure needed for transactions and interactions to take place smoothly. By setting standards for business conduct and protecting parties' interests, the law fosters economic growth and stability (Bingham, 2010).

Justice (Bingham, 2010) is a fundamental pillar of any society, and the legal system serves as its bedrock. Laws provide a framework for resolving disputes, punishing

wrongdoing, and ensuring that individuals are held accountable for their actions. A just legal system fosters trust and confidence in the society it serves.

Promoting Economic Growth and Stability

Commercial law and regulations play a pivotal role in promoting economic growth and stability (Bingham, 2010). By providing a predictable and transparent environment for business transactions, the law encourages investments, protects property rights, and ensures that contracts are honored. A well-regulated economy is essential for the prosperity of a nation.

Safeguarding ublic Health and Safety

Health and safety regulations (Bingham, 2010)are crucial aspects of the legal system. Laws governing food safety, workplace conditions, environmental protection, and public health ensure that individuals are not exposed to unnecessary risks and hazards. These laws contribute to the overall well-being of the population.

Fostering Social Change and Progress

Throughout history, law has played a vital role in driving social change and progress. Landmark legal decisions and legislation have paved the way for civil rights advancements, gender equality, and the recognition of marginalized communities. The law acts as a catalyst for positive societal transformation (Bingham, 2010).

Providing a Framework for Governance

Laws provide the framework for governance by outlining government institutions' powers, responsibilities, and limitations. Constitutional laws, for instance, define the structure of government and establish the rights of citizens. This ensures a balance of power and prevents abuse of authority (Bingham, 2010).

On the other hand, a series of laws, such as the constitution of most countries, if they become rigid in law writing, have consequences from the point of view of legal linguistics and then We go to other cases.

Rigid Constitution

A rigid constitution (Bingham, 2010) is a foundational legal document that sets the fundamental principles of a nation and imposes specific procedures for its amendment. While it offers stability, protection of rights and resistance to impulsive changes, its inflexibility may pose challenges in adapting to the evolving needs of a dynamic society.

A rigid constitution refers to a constitutional framework that is characterised by a specific and often more intricate process for its amendment or alteration. In contrast to

flexible constitutions, which can be amended through regular legislative procedures, a rigid constitution establishes additional safeguards and procedures that must be followed to modify its fundamental principles (Bingham, 2010). This concept is integral to understanding the legal and political systems of various countries, with prime examples including the constitutions of the United States, Australia and Switzerland.

Fundamental Nature of Rigid Constitutions

At the core of a rigid constitution lies the notion that certain laws, commonly referred to as constitutional or fundamental laws, hold a unique status within the legal hierarchy. These laws, which embody the foundational principles of the nation, cannot be changed using the same mechanisms employed for ordinary legislation (Bingham, 2010).

The designation of a constitution as "rigid" stems from the establishment of specific legal barriers that must be overcome before any alterations can be made to its provisions.

Examples of Rigid Constitutions

Prominent examples of rigid constitutions (Bingham, 2010) include the United States Constitution, the Australian Constitution and the Swiss Federal Constitution. In these cases, the framers deliberately designed the constitutional framework to be resistant to hasty changes and whims of temporary popular sentiment.

The significance of these constitutions as foundational documents for their respective nations is underscored by the intricate processes required for their amendment (Bingham, 2010).

Amendment Procedures in Rigid Constitutions

The defining feature of a rigid constitution (Bingham, 2010) is its amendment procedure, which is distinct from the routine legislative process. A. V. Dicey, a legal scholar, aptly describes this distinction by asserting that under a rigid constitution, certain laws "cannot be changed in the same manner as ordinary laws."

The amendment process (Bingham, 2010) typically involves hurdles such as obtaining special approval from the public through a referendum, securing a supermajority or special majority in the legislature or a combination of both.

Merits of Rigid Constitutions

Stability and Performance: One of the primary merits of a rigid constitution is the stability it imparts to the legal and political system. By requiring a deliberate and often

complex amendment process, it ensures that changes to the foundational principles are not made impulsively. This stability is considered essential for the efficient functioning of a nation (Bingham, 2010).

Symbol of National Efficiency: A rigid constitution is often seen as a symbol of national efficiency. Crafted by experienced and learned individuals, it embodies the collective will of the sovereign and is revered as a sacred document. Citizens are inclined to adhere to its provisions with a sense of reverence and duty (Bingham, 2010).

Safeguarding Against Legislative Violation: The rigidity of the constitution serves as a safeguard against potential misuse or manipulation by legislative bodies. It prevents the constitution from becoming a mere instrument in the hands of politicians, ensuring that fundamental principles are upheld (Bingham, 2010).

Protection of Fundamental Rights and Minority Rights: Rigid constitutions are effective in safeguarding fundamental rights and protecting the rights of minorities. The deliberate and cautious amendment process acts as a barrier to any attempts to infringe upon these essential rights(Bingham, 2010).

Resistance to Temporary Passions: By complicating the amendment procedure, a rigid constitution provides a bulwark against the sway of temporary popular passions. This prevents the constitution from being hastily altered based on fleeting emotions, promoting decisions grounded in wisdom and reasoning(Bingham, 2010).

Suitability for Federal Systems: Federal systems of government, which involve a division of powers between central and regional entities, benefit from rigid constitutions. They provide a sense of security to individual units while simultaneously imposing checks on their activities to prevent violations of each other's jurisdictions (Bingham, 2010).

Demerits of Rigid Constitutions

Difficulty in Amendment: The primary drawback of a rigid constitution (Bingham, 2010) is the difficulty in amending it. While this is considered a strength in terms of stability, it can become a limitation when changes are deemed essential but are hindered by the intricate amendment process.

Lack of Adaptability: In rapidly changing societies or progressive nations, the inflexibility of a rigid constitution may pose challenges. The framers may not have foreseen all future developments, rendering the constitution less adaptable to emerging needs (Bingham, 2010).

Unforeseen Future Changes: The inability to predict all future changes is a potential shortcoming of rigid constitutions. The framers, despite their foresight, may not have anticipated the evolving dynamics of society and governance (Bingham, 2010).

Judicial Focus: Under a rigid constitution, the primary role of the judiciary often revolves around ensuring that laws conform to constitutional provisions. While this is essential, it may limit the judiciary's broader engagement with societal issues (Bingham, 2010).

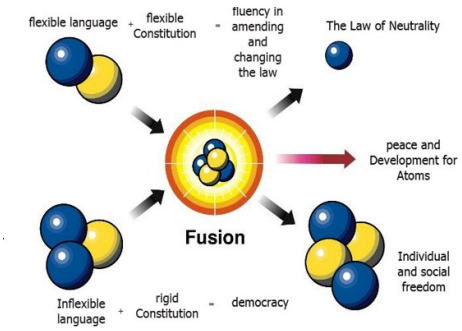

Fig. 6- Fusion of Radio- Legalanguage

Fusional RadiolegalLingusitics

Radioactive language can bring to the fore the two poles of health and harm for the law in protecting children's rights. Finally, if the language of law writing and coding is not done correctly, it will have irreparable consequences for children's rights and cause radioactive diseases like radioactive, but if the law is correctly interpreted according to the linguistic context. It causes hyperthyroidism (RAI), (Jackson, 2006) to be treated by damaging or destroying thyroid cells through radiation.[3]Radiolegal linguistics and [4]RAI can match each other in correct law writing.

Fig. 7- Function of Radiolegal Linguistics

[3] Radioactive legal linguistics; Invented word is specially for Parham Nami Fard Tehrani; The author of the article is present.
[4]radioactive iodine

If you use legalese and outdated language in a document, you risk eroding your clients' trust and distancing your readers. Clear language, on the other hand, will make your readers feel confident in what they're signing, which builds trust and connection. Plain language also helps to save time, money, and resources. (Radiolegal linguistics can be harmful)

There is no comprehensive prohibition of nuclear weapons, but only partial prohibitions, as follows: the prohibition to test, use, manufacture, produce, acquire, receive, stockpile, install, locate and possess nuclear weapons in a stated region. (Radiolegal linguistics can be useful)

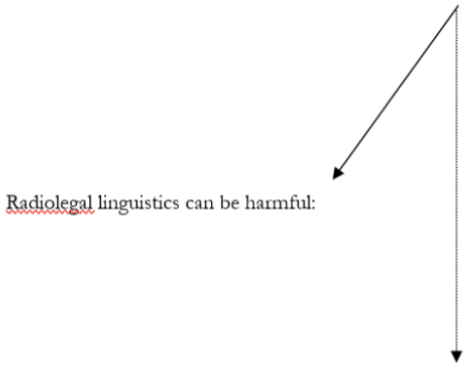

Fig. 8- Energy Explosion of Legalanguage

The prohibition of nuclear weapons

Treaty overview

By resolution 71/258, (Kmentt, 2023) the General Assembly decided to convene in 2017 a United Nations conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination. The Assembly encouraged all Member States to participate in the Conference, with the participation and contribution of international organizations and civil society representatives.

The Conference took place from 27 to 31 March and from 15 June to 7 July in New York.

[5] TPNW includes a comprehensive set of prohibitions on participating in any nuclear weapon activities. These include undertakings not to develop, test, produce, acquire, possess, stockpile, use or threaten to use nuclear weapons. The Treaty also prohibits the deployment of nuclear weapons on national territory and the provision of assistance to any State in the conduct of prohibited activities. States parties will be obliged

[5]The Treaty on the Prohibition of Nuclear Weapons

to prevent and suppress any activity prohibited under the TPNW undertaken by persons or on territory under its jurisdiction or control. The Treaty also obliges States parties to provide adequate assistance to individuals affected by the use or testing of nuclear weapons, as well as to take necessary and appropriate measure of environmental remediation in areas under its jurisdiction or control contaminated as a result of activities related to the testing or use of nuclear weapons (Kmentt, 2023).

The Treaty on the Prohibition of Nuclear Weapons(Kmentt, 2023) was adopted by the Conference (by a vote of 122 States in favour, with one vote against and one abstention) at the United Nations on 7 July 2017, and opened for signature on 20 September 2017. Following the deposit with the Secretary-General of the 50th instrument of ratification or accession of the Treaty on 24 October 2020, it entered into force on 22 January 2021 in accordance with its article 15 (1).

Treaty implementation

Meetings of States Parties

Article 8(2) of the Treaty specifies that "the first meeting of States Parties shall be convened by the Secretary- General of the United Nations within one year of the entry into force of this Treaty. Further meetings of States Parties shall be convened by the Secretary-General of the United Nations on a biennial basis, unless otherwise agreed by the States Parties (Kmentt, 2023)."

The first Meeting of States Parties was held in Vienna, Austria, from 21 to 23 June 2022. The Meeting adopted a Declaration entitled "Our commitment to a world free of nuclear weapons" as well as the Vienna Action Plan for further implementation of the Treaty. The Meeting also took a number of additional decisions, including notably the establishment of deadlines for the removal from operational status and destruction of nuclear weapons and other nuclear explosive devices, and their removal from national territories, as required by article 4 of the Treaty. The report of the first Meeting (TPNW/MSP/2022/6) contains a record of all decisions taken at the Meeting (Kmentt, 2023).

The second Meeting of States Parties was held at United Nations Headquarters in New York from 27 November to 1 December 2023. The Meeting conducted thematic discussions on the humanitarian impact of nuclear weapons and adopted a Declaration entitled "Our commitment to upholding the prohibition of nuclear weapons and averting

their catastrophic consequences". The Meeting took several decisions, including the establishment of a consultative process on security concerns of States and working towards the establishment of an international trust fund for victim assistance and environmental remediation at the third Meeting. The report of the second Meeting (TPNW/MSP/2023/14) contains a record of all decisions taken at the Meeting(Kmentt, 2023).

The third Meeting will take place at United Nations Headquarters in New York in March 2025.

Scientific Advisory Group

By its decision 2, the first Meeting of States Parties (Kmentt, 2023) established a Scientific Advisory Group to be composed of a maximum of 15 members. The Group has a broad mandate to inform States Parties about developments in scientific and technical fields relevant to the Treaty, including the implementation of article 4 of the treaty, humanitarian consequences and risks associated with nuclear weapons and nuclear disarmament and non-proliferation more widely.

The Members of the Group were appointed on 8 February 2023 and held their constitutive meeting on 1 March 2023. More information about the work of the Scientific Advisory Group can be found on Meetings Place.

Role of the United Nations

By its resolution (Kmentt, 2023) 72/31 of 4 December 2017, the General Assembly requested the Secretary-General to render the necessary assistance and to provide such services as may be necessary to fulfil the tasks entrusted to him under the Treaty on the Prohibition of Nuclear Weapons. Under Article 19, the Secretary-General is designated as depository of the Treaty. He is also tasked with the transmission to the States Parties of declarations received pursuant to Article 2 of the Treaty and the convening of Meetings of States Parties and Review Conferences (Article 8).

Background

The initiative to seek a legally binding instrument to prohibit nuclear weapons is an outcome of the discourse centred on promoting greater awareness and understanding of

the humanitarian consequences that would result from any use of nuclear weapons (Kmentt, 2023).

Renewed interest in the humanitarian impact of nuclear weapons was first manifested in the final document (NPT/CONF.2010/50 (Vol. I)) of the 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. In its conclusions and recommendations for follow-on actions, the Conference expressed its deep concern at the catastrophic humanitarian consequences of any use of nuclear weapons and reaffirmed the need for all States at all times to comply with applicable international law, including international humanitarian law (Kmentt, 2023).

In 2012, expressing concern about the catastrophic humanitarian consequences of any use of nuclear weapons (Kmentt, 2023), the General Assembly adopted resolution 67/56 entitled "Taking forward multilateral nuclear disarmament negotiations". By this resolution, the Assembly established in 2013 an open-ended working group to develop proposals to take forward multilateral nuclear disarmament negotiations for the achievement and maintenance of a world without nuclear weapons and the open-ended working group reflected its discussion in its report (A/68/514).

A series of three international conferences on the humanitarian impact of nuclear weapons, convened in 2013 and 2014 respectively in Norway, Mexico and Austria, sought to present a facts-based understanding of the short and longer-term effects of a nuclear weapon detonation (Kmentt, 2023).

These conferences, which included participation by a large majority of States, the International Committee of the Red Cross and hundreds of representatives of non-governmental organizations, principally coordinated by [6]ICAN, played an important role in building demand for urgent action to advance nuclear disarmament negotiations (Kmentt, 2023).

In accordance with The Treaty on the Prohibition of Nuclear Weapons includes a comprehensive set of prohibitions on participating in any nuclear weapon activities. These include undertakings not to develop, test, produce, acquire, possess, stockpile, use or threaten to use nuclear weapons.

In accordance with the structure of the atom, in the green part of the radiolegal linguistics, it acts as a protective layer in the form of the Nuclear Weapons Prohibition Treaty, which can exhibit physical behavior in a bipolar form, and children's lives against

[6]the International Campaign to Abolish Nuclear Weapons

armed conflicts based on international humanitarian law and protect or endanger the rights of war. (In the form of electrons)

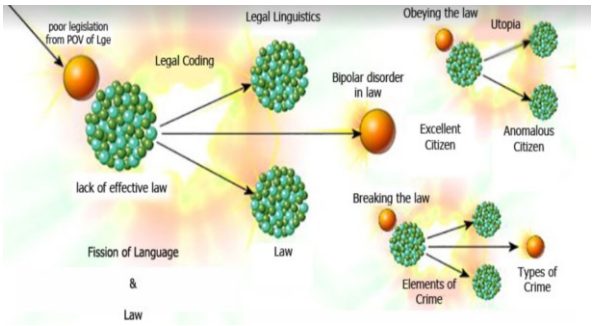

Fig. 9- Electronic Circuit of Nuclear-Legal Linguistics

In the blue part of picture, Language; the foundation of human communication, is a potent tool that can shape perceptions, influence emotions, and even incite violence. In times of war and conflict, language plays a particularly crucial role, serving as a weapon of war, a tool for peacebuilding, and a means of narrative control.

Language as a Weapon of War (Continuing the analysis of the blue sector)

In the hands of skilled manipulators, language can be transformed into a weapon of war, capable of inciting hatred, demonizing opponents, and justifying violence. Inflammatory rhetoric, dehumanizing language, and propaganda can all serve to fuel conflict and undermine the prospects for peace (Allcott, Gentzkow, & Taber, 2019).

Historical examples abound of the destructive power of language in wartime. The infamous slogan "Kill the Chinese and take their land," widely disseminated during the Second Sino-Japanese War, played a significant role in dehumanizing the enemy and encouraging atrocities (Iriye, 1981). Similarly, the use of racial slurs and dehumanizing language during the Rwandan genocide dehumanized the victims, making it easier for perpetrators to carry out mass atrocities (Destexhe, 2005).

Language as a Tool for Peacebuilding

Language can also be a powerful force for peacebuilding, fostering understanding, promoting empathy, and facilitating dialogue (Piotrowski & Walker, 2006). In the aftermath of conflict, reconciliation efforts often rely on effective communication to heal wounds, rebuild trust, and prevent future violence.

The use of inclusive language, respectful dialogue, and narratives that promote healing can help to bridge divides and pave the way for a more peaceful future (Humphrey, 2005). For instance, peacebuilding efforts in post-conflict societies often emphasize the use of shared language and symbols to foster a sense of common identity and belonging (Humphrey, 2005). The Colombian peace process, for example, placed a strong emphasis on the use of language to promote understanding and reconciliation between former adversaries (Guzman, 2016).

Language and Narrative Control

In times of war and conflict, governments and other actors often engage in a struggle for narrative control, seeking to shape the public's understanding of events and justify their actions (Cotterell, 2003). This can involve the use of euphemisms, manipulation of facts, and the suppression of dissenting voices (Cotterell, 2003).

The control of language can be a powerful tool for maintaining power and legitimizing actions, even when they are morally questionable (Chomsky, 2002). For example, governments may use euphemisms like "collateral damage" to downplay civilian casualties (Shaw, 1998) or employ labels like "insurgents" or "terrorists" to demonize opponents (Chomsky, 2002). More recent examples include the use of social media by governments to manipulate public opinion, spread disinformation, and suppress dissent (Benkler, 2016). Similarly, the rise of fake news and deepfakes has made it increasingly difficult to distinguish between truth and fiction, further complicating the struggle for narrative control (Van der Linden, Leenknecht, &Roozenbeek, 2019).

Language is a double-edged sword, capable of both inciting violence and promoting peace. In times of war and conflict, the words we choose have a profound impact on the course of events (Piotrowski & Walker, 2006). By understanding the power of language, we can better recognize its potential for both harm and good and strive to use it as a force for peace and reconciliation.

Moreover law is language. It is not solely language, since it is a social institution manifested also in non-linguistic ways, but it is a profoundly linguistic institution.

Laws are coded in language, and the processes of the law are mediated through language. The legal system puts into action a society's beliefs and values, and it permeates many areas of life, from a teacher's responsibilities to a credit card agreement. The language

of the law is therefore of genuine importance, particularly for people concerned with addressing language issues and problems in the real world - that is, Applied Linguists.

Aside from the work of applied linguists, there is important related work on language and the law in the fields of literature, communication, philosophy, legal studies, and psychology. Word limits mean that there is not space to discuss all of these issues, although a comprehensive theorized understanding would demand their inclusion. Indeed, each of the major areas in the review that follows merits a lengthy review of its own, but even these topics cannot be treated in more than a passing manner in a review such as this: Rather than repeat this warning in each section, I make it now.

1. Communication

Legal communication includes non-verbal semiotic systems (e.g., gesture, illustrations) and a linguistic system with (at least) three levels: the grapho-phonic system (e.g., the font used in a legal document, the pace and intonation of a judge's instructions to a jury); the lexico-grammatical system (words, morphology, syntax); and the discourse system, including genres. The regular use of particular lexicon and grammar within specific socio-cultural areas such as the law constitute another linguistic aspect, that of registers (Kurzon 1997) - while difficult to define, the legal register is usually easily recognizable. The lexico-grammar is used to negotiate meaning, including propositional meaning, social meaning, and functional meaning (the last often referred to as 'speech acts'). This negotiating of meaning inevitably involves a construal of the social and physical world - the legal view of the world is unique and particular. Such construal is therefore pragmatically related to sociocultural and physical contexts. As the notion of construal implies, a third aspect of communication is the world view/knowledge of the participants, including their social schemas, physical world schemas, and intentions, in other words, their preexisting shared and differing understandings of social and material worlds, and particularly of the topic of the communication. An important part of this knowledge consists of their command of the above elements of the communication process, that is, their communicative ability.

2. Law

Law consists both of a code of laws and processes for applying them and disputing their application. This distinction, between the static or codified, and the dynamic and

dialogic aspects of the law is useful, although the two interact, and the boundary is fuzzy (for instance 'precedent' operates as means of converting the outcomes of dynamic legal processes into static bases for interpretation). Law of this kind appears to have developed long before writing as part of the regulatory system of human societies, as can still be seen in the "traditional law" of orate cultures. (There is a substantial anthropological literature.) Religion has also played a role in the development of law - an important predecessor of Common Law courts were the Ecclesiastical courts; for example, Islamic or Shari'ah Law is the basis of many legal systems around the world, although not entirely: Saudi Arabia has non-Islamic traffic courts. There are, in addition, many 'local' legal systems, but these have often blended with two secular legal systems which have evolved into many variants around the world. Roman Law, also known as the Inquisitorial system, developed from ancient Roman law and is found in much of continental Europe, East and South East Asia, Latin America, and parts of Africa and the Middle East. Common Law, also known as the Adversarial system, originated in England and Wales and can be found where English speakers have ruled, including England and Wales, North America, much of Australasia and Oceania, South Asia, Singapore and Malaysia, and parts of Africa and the Middle East.

LEGAL LANGUAGE

The law in literate societies is a social institution which has become highly specialized, predominantly written, and since it involves the imposition of societal norms, associated with the deployment of power. These three characteristics are marked in the language of the law. The development of the language of the law thus reveals 1) the move from speech to writing, 2) specialization and technicality (e.g., legal dictionaries), and 3) the use of power (Atkinson and Drew 1979).

Jackson (1994:201) writes, "The cognitive structures of the law have come to reflect written forms of consciousness." Danet and Bogoch (1994) document the linguistic consequences of the move from spoken to written legal texts, and also the return to more orate forms in incipient post-literate uses of video recording and photography, perhaps as part of a more profound cultural change from aurality to visuality. Judges too may 'translate' from written to spoken form for the benefit of jurors (Phillips 1985).

Technicality and the impact of writing are manifested in various ways. The main lexical characteristic of the law is large-scale technicality. This feature can involve technical terms that are not part of everyday language, such as 'codicil,' 'deforcement,' and 'decree

nisi.' But it may also mean that everyday words are used in a specialized sense, for instance 'contempt,' 'execution' (of a document), 'caution,' and 'costs.' The classic Mellinkoff (1963) text is still an important source for a history of the language of Common Law, including the influence of Latin (e.g., 'habeas corpus') and French (e.g., 'tort') in the development of technical language (see also Hiltunen 1990). The legal system construes external reality in a unique way and legal practice is a distinct microculture, so at least some of this lexical technicality is necessary to express legal notions and refer to legal processes. The grammar of the language of the law reflects in very long noun phrases the need to package complex and precise meanings (Danet 1990) and in complex syntactic structures the need to establish both the nature of laws and the conditions under which they apply (Bhatia 1994). Both of these characteristics are required, but probably not to the degree to which they are currently used. Legal technicality is also found in languages other than English and in other legal systems; for instance, Pardo (1996:36) describes legal technicality in Spanish, as does Duarte (1993:66-67) for Catalan. In the area of semantics and hermeneutics, linguistics has many applications in the areas of the drafting, interpretation, and implementation of the law. The Plain Legal Language movement is perhaps the best known influence upon drafting. There is a significant and occasionally heated debate (e.g., *Washington University Law Quarterly* 1995, 73/5) between eminent lawyers and linguists concerning the role of linguistic approaches to interpretation and implementation of legislation, and Solan (1995) provides important insights on this debate.

Power relations are manifested in many ways, but particularly in spoken interaction between lawyers and layfolk, between police and public, and between prison staff and prisoners. For example, turn allocation in the courtroom is constrained by power relations. Another example is the extensively studied coerciveness of courtroom questioning (Danet, *et al.* 1980, Harris 1984), with degrees of coercion in barristers' questions ranging from the very open "can you tell us anything about the incident?" to the highly coercive "you removed it, didn't you?" Other coercive tactics include the use of presupposition, reformulations which distort what a witness said, variations in pace, unexpected ordering of questions, and the use of loaded vocabulary. The use of technicality may also serve power purposes. However, witnesses may resist and may indeed use tactics of their own.

Three additional focal areas of legal language research include speech act analysis, discourse interaction, and critical discourse analysis. Speech act analysis in the law has mainly concerned itself with the nature of certain language crimes such as threats and

broken promises (see 'language crimes' below) and with the major speech act of 'enactment' (Kurzon 1986), the form of words by which statutes put out by a parliament or other ruling body become law. Enactment formulae are found in many legal systems. (I have examples from Germany, Italy, Egypt, the USA, Australia, and the UK, and Pardo [1994] describes one for Spanish.) Jackson (1997) challenges the notion that these are in fact enactment speech acts.

At the discourse level, Hale and Gibbons (forthcoming) show that two levels of reality are manifested in courtroom language: the primary courtroom reality and the secondary reality of the events under litigation, which are projected through the courtroom reality. Concerning the primary reality, Maley (1994) provides a taxonomy of legal genres, and Atkinson and Drew (1979) and Harris (1984) represent examples of conversation analyses of courtroom discourse. A well established way of conceiving the representation of the secondary reality is to view it as narrative, and in fact to see prosecution and defense cases as containing competing narrative representations of the same reality. Bennett and Feldman (1981) describe these as competing "stories." There has been sustained interest in this type of analysis (Brooks and Gewirtz 1996), and courtroom narratives are not limited to the particular events under litigation; they may be stories of the witness' life, loves, and previous contacts with the law, and their appraisal might benefit from literary imagination (Bohler and le Roux 1997, Nussbaum 1995). Work has also been done on interaction in other legal settings such as dispute resolution and lawyer-client interaction.

Critical discourse analysis has also become an emerging focus. For instance, Vasilachis de Gialdino (1997a; 1997b) examined an Argentinian labor reform bill rooted in neo-liberalism, describing the language used within labor courts in Argentina, the discussion of the reform in the parliament and the executive, and the treatment of these in the local press. She showed that, in the case of local press reporting, workers were not discussed, unionists were portrayed as violent and irrational, and reduced protection for workers was portrayed as a positive move towards globalization, modernization, and flexibility (Vasilachis de Gialdino 1997a: 270-271). There is similarly a growing debate concerning gender and language in the law, often showing an interaction between legal power and male-female power relations (Bogoch 1997, Chng 1996:16-21, Matoesian 1997). This discussion is also related to language and disadvantage before the law.

In the red part of that in the form of neutrons, there were also great increases in perinatal deaths and cases of microcephaly and retardation in children exposed in utero to

the bombs. In the event that there are future generations after a nuclear war, the issue of heritable genetic effects will become important. Of course, if this action is controlled by the Treaty on the Prohibition of Nuclear Weapons, the function of using or threatening nuclear weapons is neutral and otherwise dangerous.

But the difference between it and the neutron is that it has a nuclear electric charge in space, and the common point is that both of them have neutrons and nuclear weapons.

Reactor its relationship with legal-nuclear linguistics

The reactor is considered the most important member in the chemical unit and is the equipment in which chemical reactions take place to produce the desired substance. Chemical reactions can include conversion, combination or decomposition, but it should be noted that according to the convention, a device in which the burning reaction is carried out in order to produce energy is not considered a reactor.

In a chemical industry unit, raw materials first go through a series of primary physical change processes such as separation, mixing, etc., in order to be ready to enter the next stage, which is chemical changes. In this step, with the help of the reactor, the desired chemical reactions are carried out and the product is prepared.

Due to some unwanted reactions or the presence of some primary raw materials that did not have a chance to react in the reactor and left the reactor together with the product, it is not possible to directly supply the product to the market, and final physical operations such as purification are necessary. , separation, etc. on the product.Factors such as temperature, pressure, concentration, mixing, etc. are effective in the performance and speed of a reaction.

Therefore, the principles of fluid mechanics, thermodynamics, heat transfer, mass transfer, and kinetics of chemical reactions are used in designing a chemical reactor.

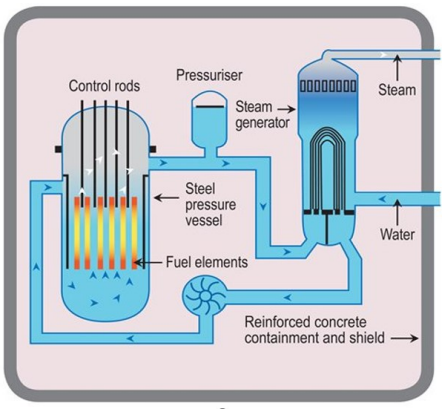

Fig. 10- Chemical Reactor Pattern

Large reactors are made for industrial use and small size reactors are produced for research and laboratory applications. In the construction of reactors, the economic genius, in addition to the application, always influences the optimal design.

In general, reactors are designed and built in different industries and in order to perform different chemical reactions, including chemical reactors, catalytic reactors, and nuclear reactors. The following three important parameters are used to describe the performance of the reactor:

1. Conversion
2. Selectivity
3. Yield

The conversion percentage is equal to the ratio of the amount of reactive substances consumed in the reactor to the amount of reactive substances fed to the reactor. If the reaction is reversible, the maximum percent conversion that can be achieved is called the equilibrium percent conversion.

Selectivity is equal to the ratio of the amount of desired product produced to the amount of reactive substances consumed.

Efficiency is equal to the ratio of the amount of desired product produced to the amount of reactants that are fed.

If we want to combine the provisions of law and language together and implement it on a chemical reactor, it can be depicted as follows:

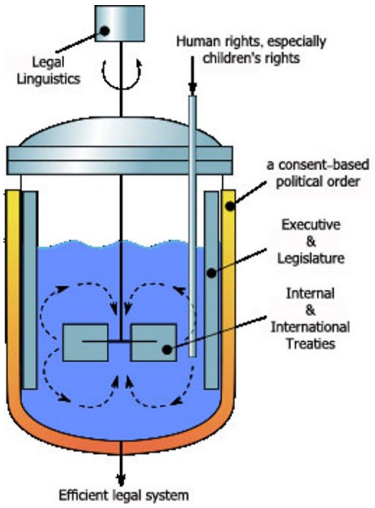

Fig. 11- Chemaical Legalanguage Reactor

Explanations:

1. **Motor**= In this section, legal linguistics plays the role of a reactor engine; Because if linguistics and jurisprudence together do not bring about the correlation of two separate disciplines, it will cause the reactor engine to mistakenly combine organic materials and, as a result, deliver an unexpected product to various industries. As a result, in order to operate the reactor engine, we need a strong engine called legal linguistics to carry out the process of chemical reactions during which the raw materials are transformed into the required products.

2. **Feed**= The food fed by the reactor source is not part of human rights, especially children's rights; Because according to international conventions, they should be paid attention to. **Children's rights** or **the rights of children** are a subset of human rights with particular attention to the rights of special protection and care afforded to minors. The 1989 [7]CRC defines a child as "any human being below the age of eighteen years, unless under the law applicable to the child, majority is attained earlier." Children's rights includes their right to association with both parents, human identity as well as the basic needs for physical protection, food, universal state-paid education, health care, and criminal laws appropriate for the age and development of the child, equal protection of the child's civil rights, and freedom from discrimination on the basis of the child's race, gender, sexual orientation, gender identity, national origin, religion, disability, color, ethnicity, or other characteristics.

[7] Convention on the Rights of the Child

Interpretations of children's rights range from allowing children the capacity for autonomous action to the enforcement of children being physically, mentally and emotionally free from abuse, though what constitutes "abuse" is a matter of debate. Other definitions include the rights to care and nurturing. There are no definitions of other terms used to describe young people such as "adolescents", "teenagers", or "youth" in international law, but the children's rights movement is considered distinct from the youth rights movement. The field of children's rights spans the fields of law, politics, religion, and morality.

3. **Cooling Jacket**= When the parties have a political order based on consent when entering into a contract, both domestic and foreign, they feel calm and confident about concluding it, and all the items contained in the contract will be fulfilled to them.

4. **baffle**= It must be acknowledged that the constitution is the written wealth of every human community that has come into existence under the title of country, and it regulates the social relations of individuals and social institutions, and since the constitution of a country is the result of several centuries of human experience, It should be considered as one of the achievements of the common heritage of humanity, which is not specific to any individual or group or nation or people.

The Constitution, as the highest national covenant - which is the source of all other laws and regulations - establishes the behavior pattern of the ruler and the subject in every law-based system; A model that legislative and judicial executive powers should put at the top of their attention in all matters and strive for its strength and excellence so that the fundamental rights of the people in every land that is established on the basis of democracy are protected; Therefore, we intend to express the principles related to the legislative body in the constitution and the interpretations of these principles by jurists, considering the nearness of the Islamic Council elections.

According to the seventy-seventh article of the Constitution of the Islamic Republic of Iran: treaties, agreements, contracts and international agreements must be approved by the Islamic Council.

International treaties are considered as one of the most important elements of establishing communication between different legal systems and because of this important function, they have been approved by the constitution with the establishment and implementation of the system of the Islamic Republic of Iran. The existing considerations during the drafting of the constitution have caused the substantive basis of international

treaties to be considered more than the formal procedure governing their approval in the constitution of the Islamic Republic of Iran.

International agreements with whatever title is used can be divided into two categories, official international treaties that require complete formalities stipulated in international law among its subjects, which usually refer to this category of treaties on basic relations between countries. include In this case, the executive branch will be able to conclude an international treaty only with the approval and direct supervision of the legislative branch.

The second category of these agreements are simple executive, administrative, technical and service agreements that are concluded between countries, and these agreements have nothing to do with the sovereignty of governments. For this reason, they do not need to perform special ceremonies. From the context of the wording of this principle, it can be inferred that all international agreements are formal agreements and without exception require the approval of the parliament.

The Guardian Council states through three theories that contracts where one party is a ministry or institution or a government company and the other party is a private company contract are not considered international contracts. In the opposite sense of this theory, it seems that contracts between governments, even though the issue is similar to contracts concluded between the government and a private foreign party, are considered international and must be approved by the parliament.

If the memorandum of understanding creates an obligation, it is like a contract and the rules of Article 77 must be observed. Partial contracts in relation to the principle of contracts subject to Article 77, if they are outside the scope of the principle of the contract, must be approved by the parliament. In the opposite sense of this theory, it can be said that partial contracts that are within the scope of the principle of the contract in relation to the principle of contracts subject to Article 77, need It does not have to be approved by the parliament.

Article 77 of the Constitution, in accordance with Article 125 of the Constitution, refrains from contracts that are concluded between ministries and other Iranian government organizations and foreign government companies that have legal personality, and the special cases of such contracts if their general conditions If it is determined by the normal law, it does not require the approval of the parliament.

According to Article 9 of the Civil Code, the provisions of agreements concluded between the Iranian government and other governments according to the constitution are in force. After this article, in one analysis, it can be concluded that the provisions of contracts subject to Article 77 are on the same level as ordinary laws, and another analysis indicates that the phrase being in the rule of law represents a lower level of the provisions of international treaties and international agreements subject to Article 77 is compared to normal laws.

5. **agitator**= The task of the reactor mixer is to create international agreements and to approve and directly supervise the legislature, which are authorized by the executive branch to be signed by the relevant government, and also include domestic laws and regulations.

6. **mixed product** = The products resulting from the sometimes relevant reaction are the emergence of international conventions to prevent harm to human beings, especially children, which are:

[8]**IHL**(Solis, 2010), also referred to as the **laws of armed conflict**, is the law that regulates the conduct of [9]war . It is a branch of international law that seeks to limit the effects of armed conflict by protecting persons who are not participating in hostilities and by restricting and regulating the means and methods of warfare available to combatants.

International humanitarian law (Solis, 2010) is inspired by considerations of humanity and the mitigation of human suffering. It comprises a set of rules, which is established by treaty or custom and that seeks to protect persons and property/objects that are or may be affected by armed conflict, and it limits the rights of parties to a conflict to use methods and means of warfare of their choice. Sources of international law include international agreements (the Geneva Conventions), customary international law, general principles of nations, and case law. It defines the conduct and responsibilities of belligerent nations, neutral nations, and individuals engaged in warfare, in relation to each other and to protected persons, usually meaning non-combatants. It is designed to balance humanitarian concerns and military necessity, and subjects warfare to the rule of law by limiting its destructive effect and alleviating human suffering. Serious violations of international humanitarian law are called war crimes.

[8]International humanitarian law
[9]jus in bello

While IHL (jus in bello) concerns the rules and principles governing the conduct of warfare once armed conflict has begun, [10]jus ad bellum pertains to the justification for resorting to war and includes the crime of aggression. Together the jus in bello and jus ad bellum comprise the two strands of the laws of war governing all aspects of international armed conflicts. The law is mandatory for nations bound by the appropriate treaties. There are also other customary unwritten rules of war, many of which were explored at the Nuremberg trials. IHL operates on a strict division between rules applicable in international armed conflict and internal armed conflict(Solis, 2010).

International humanitarian law is traditionally seen as distinct from international human rights law (which governs the conduct of a state towards its people), although the two branches of law are complementary and in some ways overlap.

The Law of Geneva and The Law of Hague

Modern international humanitarian law (Solis, 2010) is made up of two historical streams:

1. The law of The Hague, referred to in the past as the law of war proper; and
2. The law of Geneva, or humanitarian law.

The two streams take their names from a number of international conferences which drew up treaties relating to war and conflict, in particular the Hague Conventions of 1899 and 1907, and the Geneva Conventions, the first of which was drawn up in 1863. Both deal with jus in bello, which deals with the question of whether certain practices are acceptable during armed conflict.

The Law of The Hague, or the laws of war proper, "determines the rights and duties of belligerents in the conduct of operations and limits the choice of means in doing harm". In particular, it concerns itself with

- the definition of combatants;
- establishes rules relating to the means and methods of warfare;
- and examines the issue of military objectives.

Systematic attempts to limit the savagery of warfare only began to develop in the 19th century. Such concerns were able to build on the changing view of warfare by states influenced by the Age of Enlightenment. The purpose of warfare was to overcome the

[10] Right to war

enemy state, which could be done by disabling the enemy combatants. Thus, "the distinction between combatants and civilians, the requirement that wounded and captured enemy combatants must be treated humanely, and that quarter must be given, some of the pillars of modern humanitarian law, all follow from this principle" (Solis, 2010).

The Law of Geneva

Fritz Munch sums up historical military practice before 1800: "The essential points seem to be these: In battle and in towns taken by force, combatants and non-combatants were killed and property was destroyed or looted." In the 17th century, the Dutch jurist Hugo Grotius, widely regarded as the founder or father of public international law, wrote that "wars, for the attainment of their objects, it cannot be denied, must employ force and terror as their most proper agents" (Solis, 2010).

Geneva Conventions

The **Geneva Conventions** are the result of a process that developed in a number of stages between 1864 and 1949. It focused on the protection of civilians and those who can no longer fight in an armed conflict. As a result of World War II, all four conventions were revised, based on previous revisions and on some of the 1907 Hague Conventions, and readopted by the international community in 1949. Later conferences have added provisions prohibiting certain methods of warfare and addressing issues of civil wars (Solis, 2010).

The first three Geneva Conventions were revised, expanded, and replaced, and the fourth one was added, in 1949.

- The Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field was adopted in 1864. It was significantly revised and replaced by the 1906 version, the 1929 version, and later the First Geneva Convention of 1949.
- The Geneva Convention for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea was adopted in 1906. It was significantly revised and replaced by the Second Geneva Convention of 1949.

- The Geneva Convention relative to the Treatment of Prisoners of War was adopted in 1929. It was significantly revised and replaced by the Third Geneva Convention of 1949.
- The Fourth Geneva Convention relative to the Protection of Civilian Persons in Time of War was adopted in 1949.

There are three additional amendment protocols to the Geneva Convention (Solis, 2010):

1. Protocol I (1977): Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts. As of 12 January 2007 it had been ratified by 167 countries.

2. Protocol II (1977): Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts. As of 12 January 2007 it had been ratified by 163 countries.

3. Protocol III (2005): Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Adoption of an Additional Distinctive Emblem. As of June 2007 it had been ratified by seventeen countries and signed but not yet ratified by an additional 68.

The Geneva Conventions of 1949 may be seen, therefore, as the result of a process which began in 1864. Today they have "achieved universal participation with 194 parties". This means that they apply to almost any international armed conflict. The Additional Protocols, however, have yet to achieve near-universal acceptance, since the United States and several other significant military powers (like Iran, Israel, India and Pakistan) are currently not parties to them.

Basic Rules of IHL

1. Protected persons (Solis, 2010) are those [11]hors de combat or not taking part in hostilities in a situation of armed conflict, and shall be protected in all circumstances. Excluding from the list of protected persons in international armed conflict are civilians under their own national authority and neutral citizens living

[11]outside of combat

in belligerent territory and co-belligerent persons as long their state of nationality maintains diplomatic relations with a belligerent power.

2. Protected persons who are wounded and sick shall be cared for and protected by the party to the conflict which has them in its power. The emblem of the "Red Cross", or of the "Red Crescent," shall be required to be respected as the sign of protection.

3. Protected persons captured by a belligerent must be protected against acts of violence and reprisals. They shall have the right to correspond with their families and to receive relief.

4. No protected person shall be subjected to torture or to cruel, inhuman, or degrading treatment or punishment.

5. Parties to a conflict do not have an unlimited choice of methods and means of warfare.

6. Parties to a conflict shall at all times distinguish between enemy combatants and protected persons. Attacks shall be directed solely against legitimate military targets.

Psychiatric effects of nuclear weapons

Immediately following radiation exposure, [12]atomic-bomb survivors experienced stress brought on by a broad range of physical, social, and psychological factors. Initial burns and injuries were followed by the onset of acute radiation symptoms, such as epilation (hair loss), bleeding, and diarrhea, even in those who previously appeared unhurt. Deaths of family members and the general upheaval of their lives as well as reports of an increased incidence of cancer as a late effect of radiation exposure heightened survivors' anxiety and fears (Yamada M, Kodama K et al, 1990).

In cases of atomic-bomb exposure(Yamada M, Kodama K et al, 1990), it is unclear to what extent symptoms reported by survivors were psychological or radiation-induced. Though psychological effects from radiation exposure must have been considerable, few studies have been conducted in this area. However, in the 1950s, psychiatrists in Hiroshima and Nagasaki reported increased complaints among A-bomb survivors of neurotic symptoms, including general fatigue, amnesia, and lack of concentration as well as other symptoms commonly associated with autonomic nerve imbalance, such as palpitation or a sense of burning or chill.

[12] A-bomb (abbreviation); Atomic bombings of Hiroshima and Nagasaki

Survivor responses to [13]RERF questionnaires revealed many of the symptoms now described in [14]PTSD, which occurs following experiences of great terror, such as floods, earthquakes, and volcanic eruptions. Symptoms reported by A-bomb survivors included recalling the occurrence and becoming upset, experiencing an increased sense of unresponsiveness and immobility, and feeling guilt and discouragement in addition to demonstrating such physical symptoms as dizziness, unconsciousness, headache, and nausea (Yamada M, Kodama K et al, 1990).

Further study of the psychological effects from radiation exposure from the atomic bombings is planned.

weapons of mass destruction treaties

A variety of treaties and agreements have been enacted to regulate the use, development and possession of various types of [15]WMD. Treaties may regulate weapons use under the customs of war (Hague Conventions, Geneva Protocol), ban specific types of weapons (Chemical Weapons Convention, Biological Weapons Convention), limit weapons research (Partial Test Ban Treaty, Comprehensive Nuclear-Test-Ban Treaty), limit allowable weapons stockpiles and delivery systems (START I, SORT) or regulate civilian use of weapon precursors (Chemical Weapons Convention, Biological Weapons Convention). The history of weapons control has also included treaties to limit effective defense against weapons of mass destruction in order to preserve the deterrent doctrine of mutual assured destruction (Anti-Ballistic Missile Treaty) as well as treaties to limit the spread of nuclear technologies geographically (African Nuclear Weapons Free Zone Treaty, Nuclear Non-Proliferation Treaty).Below is a table of the most important treaties to prohibit the use or threat of nuclear weapons along with the name of the agreement and the date of signing (Yamada M, Kodama K et al, 1990).

[13]Radiation Effects Research Foundation
[14]post traumatic stress disorder
[15]weapons of mass destruction

Disarmament and non-proliferation

Agreement	Date signed
Nuclear Non-Proliferation Treaty (NPT)	1 July 1968
Seabed Arms Control Treaty	11 February 1971
Convention on the Physical Protection of Nuclear Material	3 March 1980
Treaty on the Prohibition of Nuclear Weapons (TPNW) (2021)	20 September 2017

Fig. 12- Summary of the table of nuclear non-proliferation treaties

7- Results and Analysis

In answer to the main question, it should be said that linguistics is generally made up of different hierarchical layers, which include: phonetics, phonology, morphology, syntax, semantics, and pragmatics, which in terms of form and content indicates that the physical form An atom that consists of electrons as an extracellular membrane and a nucleus in the center of which proton and neutron elements are located in nuclear physics can be considered as the outermost layers of linguistics do the work of an electron from the point of view of atomic physics and from the point of view of its being nuclear; Most of the sciences of phonetics and phonology, in addition to grammar and syntax, can have an unequal electric charge, so that this imbalance leads to the production of interdisciplinary content of international nuclear physics legal linguistics and innovation in this field appears, which itself can be a model of connection to come to the fore.In response tothe first sub-question, it can be imagined that nuclear physics consists of protons and neutrons, and atomic physics consists of electrons and nuclei that have a chain link with each other.

In response to the second sub-question nuclear law provides a legal framework for conducting activities related to nuclear energy and ionizing radiation in a manner which adequately protects individuals, property and the environment from the dangerous effects of such activities and as I have provided a visual explanation in the previous forms, the language has a state of radioactivity that acts like nuclear physics, if it is possible to establish the advantage of controlling the atom for peace and development through the linguistics of the international law of nuclear physics. Language can cause damage as a

double-edged sword, one side of which is a healthy atomic nucleus and the other side of radioactive radiation for humans, like starting a war.My statements are in line with the initial assumptions and nothing has changed except that the Treaty on the

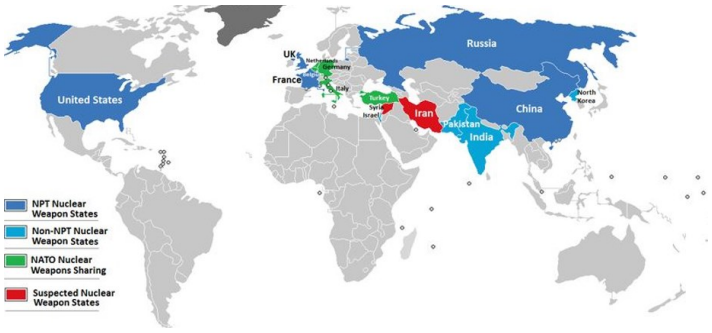

Fig. 13- The status of countries in relation to the Nuclear Non-Proliferation Treaty

Prohibition of Nuclear Weapons should be taken from the levels of description, interpretation and explanation of Norman Fairclough and implemented at the level of international law.

Iran is a party to the NPT since 1970 but was found in non-compliance with its [16]NPT safeguards agreement, and the status of its nuclear program remains in dispute. (From the point of view of Western countries)

8-Conclusion and Discussion

The language and grammar of war shape conflict — and peace. The manner in which we speak of violence, the manner in which we speak of and to our enemies, often matters as much as the actual use of organized violence. The language and grammar of war can either expand or constrict opportunities for peace. For example: The final communication between the Soviet and American presidents occurred twenty-five years ago. It illustrates this point. On 25 December 1991, Mikhail Gorbachev called George H. W. Bush to inform him that he was dissolving the Soviet Union. Gorbachev wanted to reassure Bush that the Soviet nuclear arsenal was secure, that the US was safe. Gorbachev sought Bush's reassurance that the US would help foster openness in Russia and a new more peaceful post-Cold War order. Gone was the rhetoric of communist revolution or American containment. Absent were threats of strike and counter-strike, of mutual

[16]Treaty on the Non-Proliferation of Nuclear Weapons

annihilation. The language and grammar of war, had in a short few years, given way to expressions of cooperation, respect, and friendship. The war was over.

The language of peace helps us resolve conflicts, avoid violence, and reduce bullying, misogyny, war, terrorism, genocide, circus journalism, political deception, cultural misunderstanding, and social and ecological injustice.

Wars are often encounters between speakers of different languages. In these encounters, there is on the one hand , a public policy dimension, setting frameworks and expectations, andon the other hand,the lived experience of those 'on the ground', working with and meeting speakers of other languages. Government, the military, and multilateral agencies develop language policies intended to prepare their soldiers to work with foreign allies, meet foreign enemies and deal with civilians who do not speak their language. In the context of armed conflict, soldiers experience the reality of these language encounters at first hand.

Languages at war indicates that policies and practices of language contacts in conflict seeks to test the theoretical frameworks set by language policies for war against the experiences of those at the sharp end of conflict.

The above-mentioned cases show that it is important that if the language is used to establish diplomatic relations in the field of international law and to strengthen peace, in this section, the characteristic of the radioactive iodine method of hyperthyroidism by damaging or destroying Taking thyroid cells through radiation cures, but if it is used in the direction of hostility, it loses its peace-oriented stationary state and produces radiation diseases. This case can be observed in the radiolanguage of private and public international law.

Finally, the electronic mode for the language of peace and war is created from the perspective of legal linguistics.

On the other hand, due to having an electric charge of +1 and a mass of 1, protons play a role in the field of legal linguistics as a nuclear reactor engine in order to achieve optimal results and establish important international treaties, including: the Treaty on the Prohibition of Nuclear Weapons.

In the end, it can be said that due to the fact that neutrons have 0 electric charge and 1 mass, if they are not controlled by a nuclear reactor, nuclear fission of the atom will occur. It is an urgent need. Especially from the point of view of the type of law writing in the form of legal linguistics from which treaties come out.

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