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UNIVERSAL HARM IN CONTEMPORARY ARMED CONFLICTS: DEPLETED URANIUM, THE PRECAUTIONARY PRINCIPLE, AND STATE RESPONSIBILITY

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Abstract. This article develops the concept of universal harm as a framework for understanding the transformative impact of contemporary warfare on human, ecological, and biospheric conditions of life. Moving beyond traditional legal approaches grounded in necessity, proportionality, and distinction, the study argues that modern forms of armed conflict – particularly those involving nuclear weapons and depleted uranium – generate forms of damage that transcend individual victims, national borders, and generational limits. Through an analysis of key judicial developments, including Japanese jurisprudence on the Hibakusha, the Advisory Opinion of the International Court of Justice on nuclear weapons, and recent reflections on climate change and *erga omnes* obligations, the article highlights the persistent difficulty of international law in recognizing and addressing the universal scope of such harm. Particular attention is devoted to the precautionary principle and to the challenges posed by scientific uncertainty and causal attribution in cases involving environmental and radiological damage.

Keywords: universal harm; armed conflict; depleted uranium; nuclear weapons; precautionary principle; state responsibility; *erga omnes* obligations; Biosphere; environmental harm; international law.

The destructive power of nuclear weapons cannot be contained in either space or time. They have the potential to destroy all civilization and the entire ecosystem of the planet

(*International Court of Justice, Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons, 8 July 1996, para. 35)*

INTRODUCTION

The development of contemporary warfare, particularly within technological society, has profoundly transformed the scale, nature, and consequences of armed conflict. While traditional legal and philosophical approaches regulate war through principles such as necessity, proportionality,

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and distinction [Policastro 2025b], contemporary conflicts reveal a deeper and more pervasive dimension of harm – one that transcends individual victims, national boundaries, and generational limits.

This phenomenon may be described as universal harm: damage affecting not only those directly involved in hostilities, but also the broader social, ecological, and biospheric conditions sustaining life. War must therefore be understood not only as a legal or political event, but as a process altering the fundamental relationships between humanity, nature, and law.

This article examines manifestations of universal harm in contemporary conflicts, focusing on nuclear weapons and depleted uranium, as well as legal and institutional responses at national and international levels. Through analysis of key judicial decisions – such as the Shimoda judgment and Hibakusha jurisprudence – and the ICJ Advisory Opinion on nuclear weapons, it highlights the difficulty of international law in fully addressing such harm.

This awareness is further reflected in the recent ICJ advisory opinion on climate change, emphasizing State responsibility and the *erga omnes* nature of obligations to protect life conditions and biospheric integrity.

Particular attention is given to the precautionary principle, central in environmental and international law for addressing uncertain yet potentially catastrophic risks. Its application to military activities reveals significant limits, especially regarding causality and responsibility. The case of depleted uranium illustrates how scientific uncertainty, political interests, and legal structures hinder recognition of harm.

The article concludes that the current legal framework remains insufficient to address the universal dimension of harm in modern warfare, calling for a rethinking of international responsibility based on *erga omnes* obligations to repair damage to individuals, ecosystems, and the biosphere, through an interdisciplinary approach integrating law, philosophy, ethics, and human rights. [Policastro 2025a].

1. WAR, ARMED CONFLICTS, AND THE RESPONSIBILITY OF STATES AND INVOLVED ACTORS

Reflection on the concept of universal harm could offer useful tools for rethinking the problem of war not only in moral terms but also within the framework of international law, with particular attention to the responsibility of States and the actors involved in armed conflicts.

For the purposes of our inquiry, it is useful to focus on Japan – the first country where courts of justice addressed the legal issue of the rights of the Hibakusha, the survivors of the atomic bombings of Hiroshima and Nagasaki, recognizing them as victims of an attack involving weapons of mass destruction.

Although legal and judicial recognition of their condition occurred progressively, it represented a fundamental precedent in international law.

This issue was far from secondary, as not only did the inhabitants of the bombed cities develop cancers and severe illnesses, but similar effects were observed among populations exposed to radiation during the Manhattan Project, in subsequent nuclear tests carried out by the United States in the Pacific, and at the Soviet nuclear testing site of Semipalatinsk in Kazakhstan. Added to these are the victims of French nuclear tests in Algeria and Polynesia, who were likewise affected by radiation exposure.

These individuals can be considered part of a broader phenomenon linked to the human consequences of nuclear weapons, which not only highlights the persistent health effects of such weapons but also raises important questions of legal and compensatory responsibility at both national and international levels.

The relationship between the recognition of the scale of this harm and the complexity of the issue of compensation allows us to fully grasp the importance of a thorough reflection on the concept of universal harm.

In Japan, the *Shimoda* judgment represented a crucial step in legally addressing the question of the legitimacy of the use of nuclear weapons in war.[1]

Although the ruling did not have binding authority in international law, it contributed to shaping the legal debate on the legality of weapons of mass destruction. The Court held that the use of the atomic bomb violated fundamental principles of the law of war, particularly the prohibition against inflicting unnecessary suffering on both combatants and civilians. It also compared the effects of the atomic bomb to those of chemical weapons, emphasizing that radiation caused even more severe and lasting pain. As stated in Section 2(11): "it is not too much to say that the pain brought by the atomic bombs is severer than that from poison and poison-gas."

The Court argued that the extreme destructive power of the atomic bomb made it impossible to distinguish between military and civilian targets, equating such use with indiscriminate aerial bombardment of undefended cities. According to Section 2(8): "since an aerial bombardment with an atomic bomb has the same result as a blind aerial bombardment."

This interpretation led the *Shimoda* judgment to implicitly raise the issue of universal harm, understood both as the extension of damage to the entire society of the affected area and as the extreme gravity of the human and environmental consequences. While the Court did not formally use the term

[1] Ryuichi Shimoda et al. v. The State, Tokyo District Court, 7 December 1963, English translation available at Asser Institute, https://www.asser.nl/upload/documents/DomCLIC/Docs/NLP/Japan/Shimoda_TokyoDistrictCourt_7-12-1963.pdf [accessed: 05.05.2025].

"universal harm", its legal reasoning clearly anticipates a possible formulation of the concept.

Nevertheless, despite acknowledging a violation of international law, the Court denied Japanese citizens the right to obtain compensation under international law due to the clauses of the 1951 San Francisco Peace Treaty, which excluded any claims for compensation against the United States. This not only blocked individual claims but also prevented the Japanese government from seeking reparations on behalf of the victims.

However, the judgment did not exclude the duties of the Japanese legislature to recognize the condition of the victims and denounced the lack of adequate political response. As stated in Section 6(2): "Everyone has a whole-hearted compassion for those who suffered damages by the dropping of the atomic bombs, which possess the largest-scale and strongest destructive power in human history. [...] We cannot see this suit without regretting the political poverty."

While the Court could not impose a legal obligation to compensate, it emphasized the need for an appropriate political response by the Japanese government. Nonetheless, the issue of the illegality of war under domestic law was not considered by the Japanese judge.

The *Shimoda* ruling highlighted how the normative ambiguity of international law – caught between limiting the consequences of warfare, the absence of an effective repudiation of war, and the lack of an explicit prohibition on the use of certain weapons – ended up influencing the political stance of lawmakers. This ambivalence not only hindered the legal recognition of the victims but also made the adoption of reparative measures at the national level more difficult. This legal uncertainty would remain a constant in international law at least until the adoption of the Treaty on the Prohibition of Nuclear Weapons (TPNW) in 2017.[2]

However, it would be desirable that, in the era of technological society, courts of justice declare themselves willing to consider whether wars of aggression – or those that cause mass destruction – can be regarded as inherently unjust and, as a result, give rise to an obligation to compensate or indemnify the victims.

The subsequent Japanese ruling in the *Overseas Hibakusha* case (2005) led only to a partial recognition of the harm suffered by survivors of the atomic bombings who were residing abroad. In that decision, the Japanese Supreme Court declared the administrative interpretations that excluded or hindered access to health benefits for *hibakusha* not residing in Japan unconstitutional.

[2] United Nations, Treaty on the Prohibition of Nuclear Weapons, adopted 7 July 2017; opened for signature 20 September 2017; entered into force 22 January 2021, https://disarmament.unoda.org/wmd/nuclear/tpnw/?utm_source=chatgpt.com [accessed: 05.05.2025].

The appellants in the final appeal were citizens of the Republic of Korea residing in their home country. As first-instance plaintiffs, they claimed to have been forcibly taken to Hiroshima from the Korean Peninsula during the Second World War and to have been exposed to the atomic bombing of 6 August 1945 – or to be the legal representatives of such individuals.[3]

Although the surviving plaintiffs – or those on whose behalf their successors acted – had been brought to Japan for forced labor during the colonial period, the ruling did not focus on this issue, but rather on the administrative discrimination in granting health benefits. The Court avoided directly addressing Japan's historical responsibilities regarding forced labor, even though such facts may be relevant in declaring the illegitimacy of war. Instead, it focused on the legal assessment of the legitimacy of the discriminatory administrative interpretations.

The legal recognition of the harm was based on the constitutional principle of equality (Article 14(1) of the Japanese Constitution),[4] which prohibits arbitrary discrimination, and is consistent with international human rights principles. However, while the decision ensured that *hibakusha* residing abroad gained access to medical care, financial compensation remained largely insufficient.

In this sense, Japanese case law – while marking an apparent step forward – also contributed to further fragmenting the relationship between the universality of harm and its recognition, which remained both confined to an almost exclusively national dimension and limited in scope. This reflects a broader issue within international law: the difficulty of establishing a universally applicable legal principle for the compensation of war victims.

2. THE ADVISORY OPINION OF THE INTERNATIONAL COURT OF JUSTICE ON THE LEGALITY OF THE USE AND THREAT OF USE OF NUCLEAR WEAPONS: ITS SIGNIFICANCE DESPITE ITS LIMITATIONS

This outcome proves problematic in the process that might have led to full recognition of the universality of harm, especially in light of the partial nature of the Advisory Opinion of the International Court of Justice (ICJ) on the legality of the use and threat of use of nuclear weapons. The Court avoided issuing an absolute prohibition of such weapons, leaving

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[3] Case No. 2005 (Ju) No. 1977, decided on 01.11.2007. https://web.archive.org/web/20110519235647/http://www.courts.go.jp/english/judgments/text/2007.11.01-2005.-Ju-.No..1977.html [accessed: 05.05.2025].

[4] "All citizens are equal before the law and may not be discriminated against in political, economic, or social relations on account of race, creed, sex, social status, or family origin".

room for interpretation in cases of extreme self-defense, thereby contributing to legal uncertainty concerning weapons of mass destruction.

Despite dissenting opinions – among them that of Judge Weeramantry – which emphasized the severity of the harm suffered by the victims of Hiroshima and Nagasaki and the profound uncertainty regarding their future, the illegality of the use or threat of use of nuclear weapons was affirmed only as the result of a balancing act between humanitarian law and the right of States to self-defense.

Indeed, the Court's 1996 Opinion did not establish an absolute ban, leaving open the possibility of resorting to nuclear weapons in circumstances of extreme self-defense, while failing to clarify the precise limits of such an exception. Yet this position brings with it a paradox: if one admits that, in cases of extreme necessity, a State may resort to nuclear weapons, and at the same time recognizes that their use could destroy all ecosystems, then an unacceptable prospect of self-destruction emerges.

This dilemma has not yet been resolved in international law, leaving unresolved a contradiction between the principle of self-defense and the duty to protect humanity and the environment.

The realistic argument concerning the risk of nuclear apocalypse, therefore, cannot be reduced to a mere obligation to negotiate. If it is acknowledged that the use of nuclear weapons could lead to the destruction of the entire planet, then the conventional principle of the State's right to self-defense and the mere duty to negotiate disarmament in good faith must take a step back.

In this sense, the International Court of Justice's refusal to recognize its jurisdiction in the case brought by the Marshall Islands[5] represents clear evidence of the difficulty in affirming the principle of universal harm within international law.

The underlying ambiguity that characterizes the relationship between war and law thus becomes evident: the danger and harmfulness of nuclear weapons are acknowledged, but not the harm itself. Compensation, as in the *Shimoda* case, is relegated to a decision of the legislature; or, as in the *Overseas Hibakusha* ruling, assumes a merely symbolic value.

This contradiction reflects the difficulty international law faces in imposing binding obligations on States, in order to effectively guarantee the recognition and fulfillment of their responsibilities – even in terms of compensation. Not even the Advisory Opinion of the International Court of Justice clarified crucial elements, such as attributing to the entire international

[5] International Court of Justice, Obligations concerning Negotiations relating to Cessation of the Nuclear Arms Race and to Nuclear Disarmament (Marshall Islands v. United Kingdom/India/Pakistan), Judgment of 5 October 2016, [2016] ICJ Reports 833.

community the obligation to compensate victims and to remediate contaminated areas, by recognizing global responsibility for nuclear harm.

Within this framework, it becomes necessary to rethink the very concept of harm, conceiving it from a universal perspective – not only in legal terms, but also in ethical and political ones. The idea of collective responsibility, already present in philosophical and legal debate, must be deepened in light of humanity's increasing destructive capacity toward nature and society.

In particular, the connection between universal harm and ecological harm is emerging with increasing urgency, requiring an approach that integrates constitutional law, international law, environmental ethics, and intergenerational justice. Our connection to the biosphere, to ecosystems, to present and future life, demands a reconsideration of constitutional and international relations based on the protection of life.

In the following paragraphs, we will attempt to understand this issue from a more recent perspective, related to the growing use of depleted uranium in weapons systems.

3. DEPLETED URANIUM, DIFFUSED WAR, AND THE PRECAUTIONARY PRINCIPLE

The end of the Second World War marked the beginning of a new phase of conflicts. The Cold War triggered a nuclear arms race and intensified espionage activities.[6] In parallel, conflicts developed in former colonial areas, and wars of liberation multiplied across Africa. The pursuit of maximum economic and employment growth in industrialized countries made it necessary to expand both supply and export markets. Thus, the trend toward the concentration of trade in specific areas – already characteristic of the colonial era and later of the American, British, French, German, and Japanese economic spheres of influence after the First World War – continued in only slightly altered forms, while European integration fueled hopes for a new kind of supranational statehood.

Industrial development led to a growing energy demand, and in Europe – as in other industrialized nations – a significant share of electricity was produced through nuclear reactors. In this context, during the Cold War, the need for projectiles capable of penetrating the armor of military vehicles led to the use of depleted uranium. The production of this material is primarily a byproduct of the uranium enrichment process for nuclear fuel and the fabrication of atomic weapons. Its abundance encouraged its use, though it later revealed large-scale harmful effects due to nuclear irradiation

[6] Sun Tzu devoted a part of his treatise to espionage.

[Fulco, Liverman, and Sox 2000]. The observations developed in the political and legal debate on this topic are of great interest for reflecting on the issue of universal harm.

From a deliberative standpoint, the United Nations has adopted several resolutions on depleted uranium,[7] calling on States to deepen scientific research and to impose a moratorium on the use of such material in weaponry. In this regard, the work carried out by the United Nations itself is particularly significant. The United Nations Report on General and Complete Disarmament[8] urges the international community – especially the United States – to take a stand against the use of depleted uranium in armaments. However, the opposition of the United States, the United Kingdom, Israel, and France, along with numerous abstentions, highlights a division within the international community between States that justify its use and those that suffer its consequences.

The same ambiguity emerges in the 2008 Report of the Secretary-General on the effects of the use of armaments and munitions containing depleted uranium,[9] which acknowledges the environmental and human damage documented by UNEP, particularly in the Balkans (Serbia, Montenegro, and Kosovo). Yet despite such evidence, some States – including Italy

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[7] UN General Assembly, Resolution of 5 December 2007. Effects of the use of armaments and ammunitions containing depleted uranium, A/RES/62/30; UN General Assembly, Resolution of 2 December 2008. Effects of the use of armaments and ammunitions containing depleted uranium, A/RES/63/54; UN General Assembly, Resolution of 8 December 2010, Effects of the use of armaments and ammunitions containing depleted uranium, A/RES/65/55; UN General Assembly, Resolution of 3 December 2012, Effects of the use of armaments and ammunitions containing depleted uranium, A/RES/67/36; UN General Assembly, Resolution of 2 December 2014, Effects of the use of armaments and ammunitions containing depleted uranium, A/RES/69/57. These resolutions reflect the growing concerns of the international community about the potential negative effects on human health and the environment resulting from the use of weapons containing depleted uranium, in a context of persistent scientific uncertainty. They call on States to adopt precautionary measures, ensure transparency and the sharing of contamination data, as well as the continuous monitoring of affected areas, recognizing the need to prevent serious or irreversible harm even in the presence of incomplete scientific knowledge.

[8] United Nations General Assembly, General and Complete Disarmament – Report of the First Committee, A/63/389.

[9] A/63/170/Add.1: "Italy [Original: English] [12 August 2008] 1. At present there are no certain scientific data available that could prove, beyond any doubt, that there is a close relationship between exposure, internal or external, to depleted uranium radiation and the onset of malignant forms of cancer. 2. It is nevertheless advisable to encourage the establishment of a monitoring system in those areas where depleted uranium ammunitions have been used, in order to detect possible long-term effects on civilian population and on the environment. An international research project could be promoted not only to study the effects of the use of weapons and ammunitions containing depleted uranium, but also to protect civilians and soldiers engaged in peacekeeping operations."

– continue to argue that the damage has not been sufficiently proven, while nonetheless expressing support for strengthened monitoring measures.

The issue of causality – central to the debate on harm caused by depleted uranium – takes on particular significance in this context. The reflections on symbiosis as an essential element of the evolutionary process, advanced by Lynn Margulis, and Lovelock's Gaia hypothesis – both in *Gaia* and *Novacene* – suggest that the earth's capacity to absorb and integrate substances present in the environment depends on geological time scales. However, Lovelock himself emphasizes that the growing impact of technological society may hinder such processes of symbiotic rebalancing [Lovelock 1979; Margulis 1998].

Water, air, and soil pollution already constitute a serious stress factor for ecosystems, and in wartime contexts this impact is further amplified. From this perspective, irradiation from depleted uranium can produce harmful effects even in the presence of scientific uncertainty regarding its physical and chemical properties. The triggering factor of such damage, therefore, is not only the nature of the material used, but the human and military context in which it is employed.

The United Nations documents cited highlight the need for more in-depth studies, the concern over potential harm, and the urgency of imposing moratoriums on the most dangerous weapons, including those containing depleted uranium. This position aligns closely with a perspective based on the precautionary principle.

The 2008 European Parliament Resolution[10] and the SCHER[11] report confirm that, both within the UN and the EU, the toxicity of depleted uranium for civilians, military personnel, and the environment raises serious concerns. Even if its effects are not yet fully understood, their potential severity and persistence demand the adoption of precautionary measures, including the gradual elimination of such weapons.

This argument recalls the reasoning of the *Shimoda* judgment, in which the need to prevent prolonged suffering led to a condemnation of the use of nuclear weapons on undefended cities. Similarly, in the case of depleted uranium, the risk of long-term effects raises not only ethical but also legal questions. The recommendation of moratoriums and treaties to ban such weapons, along with the call for further studies, underscores the importance of the legal principle of precaution, which requires preventive action even in the absence of complete knowledge of the risks.

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[10] European Parliament. Global Treaty to Ban Uranium Weapons – European Parliament Resolution of 22 May 2008 on (Depleted) Uranium Weapons and Their Effect on Human Health and the Environment – Towards a Global Ban on the Use of Such Weapons. TA-6-2008-0233. Brussels: European Parliament, 2008.

[11] Scientific Committee on Health and Environmental Risks (SCHER). Opinion on the Environmental and Health Risks Posed by Depleted Uranium. European Commission, 2010.

The issue of knowledge thus becomes crucial – not only knowledge of nature, but also historical, legal, and social knowledge. The precautionary principle concerns the interaction between human beings and natural processes, as well as the political and economic choices that place fundamental values such as life and health at risk. The pursuit of profit and war, aimed at controlling resources and populations, are central elements in the debate on the regulation of armaments. A legal judgment on such phenomena, and on the need to limit them, cannot be separated from a broader reflection on the role of law in protecting humanity and the biosphere.

4. THE PRECAUTIONARY PRINCIPLE AND JURISPRUDENCE ON DEPLETED URANIUM: REFLECTIONS ON LAW AND OUR LIFE IN NATURE

The precautionary principle has established itself as a fundamental rule of international and environmental law for addressing serious or irreversible risks, even under conditions of scientific uncertainty.

The historical development of this principle finds important expression in the process shaped by the principles of the 1972 Stockholm Declaration,[12] the 1982 World Charter for Nature,[13] and the 1992 Rio Declaration.[14] All three of these declarations affirm, at the same time, that nature must be spared the harm resulting from the use of weapons of mass destruction, or more generally, from acts of warfare.

However, the apparent generality of this principle must be assessed in light of how it is regulated within national constitutions[15] and European Union law.[16] According to Article 5 of the French Environmental Charter,

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[12] Stockholm Declaration on the Human Environment, United Nations Conference, 1972. See first and foremost "6. A point has been reached in history when we must shape our actions throughout the world with a more prudent care for their environmental consequences."

[13] World Charter for Nature, UN Resolution 37/7, 1982. See among others "19. The status of natural processes, ecosystems and species shall be closely monitored to enable early detection of degradation or threat, ensure timely intervention and facilitate the evaluation of conservation policies and methods"

[14] Rio Declaration on Environment and Development, United Nations Conference, 1992. See Principle 15: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

[15] This publication has been chosen among many others. It develops an important line of research on the subject, considering both international and domestic law in a transversal manner [Ippoliti Martini 2023].

[16] Article 191(2) TFEU: "The Union's environmental policy shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive action should

which forms part of the constitutional block, the precautionary principle is formulated by affirming that the emergence of a public duty to carry out appropriate assessments and to adopt proportionate provisional measures, in the face of risks of serious and irreversible damage to the environment, does not require definitive scientific proof. The difficulties in applying such a principle are numerous. The first is that adopting provisional measures without definitive scientific proof often means proceeding blindly – unless more systemic approaches to the relationship between humanity and nature are developed. Indeed, the choices of whether to act, not to act, or what action to take are all fraught with complexity.

The second problem concerns the scope within which this principle may be applied in the context of armed conflicts. In this regard, the precautionary principle is also articulated in the Earth Charter, which likewise emphasizes peace and demilitarization.[17]

We also find the precautionary principle in certain national constitutional texts. As an example of a positive formulation of the principle, we have already mentioned the French Environmental Charter of 2004.[18] In other countries, efforts to give effect to this principle stand out through constitutional interpretation, legislation, and judicial application. In this regard, the literature emphasizes that the precautionary principle has a case-by-case nature, even though general principles may emerge.[19] The report of the European Environment Agency, on the other hand, emphasizes the importance of considering not knowing as a form of wisdom – contrary to proclaimed scientific certainties.[20] Other reports have highlighted the problematic nature of us-

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be taken, that environmental damage should as a priority be rectified at source, and that the polluter should pay."

17 The Earth Charter, 29 June 2000. UNESCO Executive Board, 161 EX/Decision 3.6.1. Paris: UNESCO, 2001.The precautionary principle is enshrined in Article 6: Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach. The issues of peace and demilitarization are addressed in Article 16. A summary of this article may be as follows: Encourage peaceful cooperation and solidarity among peoples, prevent violent conflicts including those related to the environment, promote the conversion of military resources to peaceful and ecological restoration purposes, eliminate nuclear, biological, toxic, and other weapons of mass destruction, use outer space for environmental protection and peace, and recognize peace as a balance based on just relationships with oneself, with others, with cultures, with life, and with the Earth.

18 Environmental Charter of the French Republic, Constitutional Law No. 2005-205 of 1 March 2005.

19 European Environment Agency (EEA). Late Lessons from Early Warnings: The Precautionary Principle 1896-2000. Environmental Issue Report No 22. Copenhagen: EEA, 2001. https://www.eea.europa.eu/publications/environmental_issue_report_2001_22/Issue_Report_No_22.pdf [accessed: 11.03.2025].

20 European Environment Agency, Late Lessons from Early Warnings: The Precautionary Principle 1896–2000, Environmental Issue Report No. 22 (Luxembourg: Office for Official Publications of the European Communities, 2001), Preface.

ing the natural world as a laboratory.[21] In our case, however, the knowledge of the harm caused by depleted uranium is set aside in favor of a restrictive approach – one that acknowledges only a portion of the harm, namely the general aspect, while being unable to deny its existence altogether.

The Italian experience with depleted uranium, which has incorporated the precautionary principle in a sectoral manner, therefore reveals a clear contradiction. The Senate Parliamentary Inquiry Commission (2010 and subsequent resolutions) acknowledged the severity of the illnesses that developed among Italian soldiers deployed in the Balkans, highlighting the multifactorial risk arising from exposure to nanoparticles of depleted uranium and other toxic substances.[22] The Consolidated Law on Military Regulations, in Article 1079, recognizes the possibility of a causal or contributing link between exposure to nanoparticles of heavy metals and the onset of cancerous illnesses, even in the presence of scientific uncertainty – but only for Italian personnel.[23] This provision forms part of the regulatory framework concerning special monetary compensations granted by the State as a form of reparation or support to those who have suffered serious health damage, or to the survivors of those who have died due to or as a contributing result of service, terrorism, organized crime, or international missions.

Specifically, in cases involving depleted uranium, Article 1079 clarifies that the payment applies even when exposure to depleted uranium or the dispersal of nanoparticles generated by wartime explosions constitutes an efficient and determining cause or contributing factor of disability or fatal cancers. However, this compensation is granted exclusively to Italian citizens.

The absence of recognition of universal harm is accompanied by a non-compensatory approach to damage – one based on a one-time payment granted by the public administration. This approach, contrary to the compensation schemes of American law, does not allow for a concurrent tort action but also does not require full proof of the damage.

The multiplicity of factors – though not yet fully understood scientifically in their entirety and not easily controllable by public authorities – justifies the adoption of a system of administrative compensatory payments aimed

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[21] European Parliament, Directorate General for Research, Possible Toxic Effects from the Nuclear Reprocessing Plants at Sellafield and Cap de la Hague: A First Contribution to the Scientific Debate, PE 303.110 (Luxembourg: European Parliament, November 2001), Annex 5 ("The Precautionary Principle: Not Using the Sea as an Experimental Laboratory"), 89.

[22] Senate of the Republic, XVI Legislature. Parliamentary Commission of Inquiry into the Deaths and Serious Illnesses of Italian Personnel Employed Abroad [...], Verbatim Record No. 25, Session of 6 April 2011 (Rome: Senate Press, 2011), 6-9, 14.

[23] Presidential Decree (Italy) of 15 March 2010, No. 90, Consolidated Text of Regulatory Provisions on Military Organization, pursuant to Article 14 of Law No. 246 of 28 November 2005 (10G0091), Article 1079.

at preventing far-reaching consequences for individuals affected by such illnesses and for their families.

The Italian Supreme Court has clarified in this regard that the special compensation under Article 1079 of Presidential Decree No. 90/2010 is an administrative indemnity that does not require proof of the full causal link typical of civil liability, but only the demonstration of "particular environmental or operational conditions" that are plausibly the cause of the illness (Italian Supreme Court, Labor Division, 14 March 2023, No. 7409).[24]

The case law of the Italian Council of State has developed a consistent line of interpretation, beginning with the judgment of Division IV, 29 January 2014, No. 686, and consolidated in subsequent decisions (Division IV, Nos. 4914/2017; 93/2018; 6759/2018; 8074/2021; 9064/2022), according to which the special payment under Article 1079 of Presidential Decree No. 90/2010 is indemnificatory in nature rather than compensatory, serving a function of solidarity.

Consequently, the burden of proof placed on the military is reduced: full and rigorous proof of the causal link, as required in civil liability (often regarded as a true "diabolical proof"), is not necessary. Instead, a reasonable degree of probability or technical plausibility of the causal relationship is sufficient. Such plausibility may be inferred from the demonstration of significant service-related circumstances, such as prolonged exposure to qualified risk factors or environmental or operational conditions capable of causing the illness.

This easing of the evidentiary burden is grounded in the application of the precautionary principle, which requires a cautious approach to risk assessment and ensures the protection of exposed military personnel. This legal approach has secured both social security and compensatory protections for many affected soldiers.

The political and legal choice to focus attention on indemnities, rather than on a comprehensive contribution to resolving contamination – such as banning or eliminating the use of contaminating weapons, undertaking systematic environmental remediation, or protecting civilian populations after conflicts – has significant consequences. Yet there would be strong constitutional foundations for this broader approach in various constitutions.

Moreover, a large portion of international law developed after the Universal Declaration of Human Rights appears to be aimed at centering the

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[24] Transl.: "A service member seeking to receive the special compensation provided for in Article 1079 of Presidential Decree No. 90 of 2010 is not required to demonstrate the existence of a causal link between exposure to depleted uranium (or other heavy metals) and the onset of neoplasia. Such determination is necessary only when the individual is pursuing a claim for damages […] However, if the application concerns the receipt of the special compensation, the matter falls within a distinctly different indemnity framework."

experience of international law on human dignity and the protection of human rights. This is also evidenced by the development of United Nations instruments for the protection of fundamental and universal human rights.

Nevertheless, fundamental concepts from domestic legal systems often prevail – particularly the nominalist character of jurisdictional guarantees, according to which States may limit their own jurisdictions. This tendency aligns with the view that law is ultimately grounded in violence, as argued by Benjamin and Derrida; or that the actual exercise of political power – sovereignty – is based on the state of exception, as theorized by Schmitt, or on exclusion, as proposed by Agamben.[25]

The denial of universal harm is thus based on the denial of the universality of law, and for this very reason, it rests on a conception of community and legal order that is limited in space and time. This conception raises concerns, because on the one hand, the study of the emergence of legal institutions since the dawn of time makes us increasingly aware of a continuity in the human understanding of social life and its institutionalization – particularly in the form of political power and its exercise.

At the same time, our awareness grows of the common problems that we must confront together in the form of shared life within the biosphere. The manifestation of complex phenomena such as those we are witnessing – namely, an awareness of realities that transcend differences between legal systems and cultures, and instead concern the ability to exercise one's vital functions within the biosphere – raises an issue closely connected with that of biopower [Foucault 1976].

Indeed, if biopower consists in the control of bare life, then enabling each person, through law, to live and express the fundamental dimensions of human existence implies a transformation of biopower itself – from a mechanism of control into a condition for the organization of life in common [Policastro 2025a].

The recognition of the general illegality of acts capable of drastically damaging the conditions necessary for human existence – and of the duties connected to them by virtue of a basic sense of humanity – appears to be of fundamental political significance. This may also be understood in light of Polanyi's analysis, which explains how the subordination of social and natural life to systemic logics contributes to the normalization of harm, revealing the limits of legal responses that intervene only after damage has already occurred, and thereby putting at risk the very conditions of human existence [Polanyi 1944].

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[25] As also intuited in speculative literature by Ursula K. Le Guin – in The Ones Who Walk Away from Omelas – where the inversion of the name "Omelas" (i.e., Salem, O[regon]) seems to suggest that power is founded on a curse: the apparent happiness of society rests upon the misery of a single child, kept in darkness and deprivation.

5. THE CRISIS OF THE PRECAUTIONARY PRINCIPLE AND OF THE CAUSAL LINK: IS LAW A FORM OF VIOLENCE – AND PART OF VIOLENCE?

The need to recognize universal harm becomes evident, drawing from the case law on harm caused by depleted uranium, through the observation that in Italy the precautionary principle has been applied only in a limited way to the armed forces – clearly at odds with the naturalistic foundations of the principle itself.

Together with the difficulty of granting the precautionary principle a truly universal scope – since it is applied only within the bounds and limitations set by law – there is also a difficulty in conceiving the universality of the causal link. In fact, proof of causality is not conceived in any meaningful relation to the precautionary principle.

In the United Kingdom, the case brought by Reay and Hope concerning hereditary cancer predispositions attributed to the massive radiation exposures suffered by their fathers while working at the Sellafield nuclear plant unfolded within the context of a broad confrontation among scholars, jurists, and experts, calling into question the very essence of law and scientific debate.

Indeed, it emerged that the debate among the experts took on characteristics of violence and mutual denial so extreme that even the jurists themselves came to acknowledge the impossibility of reaching a form of shared knowledge – precisely the kind of impossibility that Benjamin had attributed to the struggle to establish scientific truths [Benjamin 1921, 1977].

The debate surrounding the case and the related arguments appeared, rather, to impose on the plaintiffs a sort of general obligation to accept the effects of the technological society's impact on their lives. This obligation, in a certain sense, seemed to contradict the very foundations of nuclear legislation, yet was ultimately reintroduced into the discussion through the issue of proving the causal link.

In Italy, the public acknowledgment of the duty to compensate members and employees of the armed forces exposed to depleted uranium was immediately accompanied by a request for a jurisdictional ruling. This occurred when the victims of the bombing of the Belgrade television headquarters on 23 April 1999, sought compensation from the Italian State, from whose territory the aircraft involved in the attack had taken off.

The denial of jurisdiction issued by the Court of Cassation[26] was regarded by the European Court of Human Rights as an expression of the

[26] Order No. 8157 of 8 February 2002, filed with the Registry on 5 June 2002 and communicated to the appellants on 11 June 2002 concerning the question of Italian jurisdiction over the

Italian courts' determination of their own powers to adjudicate matters such as those concerning acts of war.[27]

The significance of the Italian debate on depleted uranium must be considered starting from the first major judgment on the matter, concerning the case of Valery Melis, in which unjust damage was indeed recognized.[28] Therefore, the recognition of this legal category by military legislation as deserving of compensation has had the effect of limiting the scope of extra-contractual liability, while still allowing broader access to compensatory measures. In this regard, one can observe the persistence of an attempt to restrict the legal recognition of war and hostilities as contexts in which the protection of the individual and of fundamental rights is suspended or marginalized.

The British jurisprudence on nuclear matters, the Japanese jurisprudence – starting with the *Shimoda* case – as well as the Advisory Opinion of the International Court of Justice on nuclear weapons, all show a certain reluctance to recognize that the radical suppression of essential goods such as life, physical integrity, freedom, and property constitutes a violation of universal and absolute values. This situation may also be interpreted in light of Neumann's analysis of the transformation of law in modern political systems, in which the formal existence of legal norms does not guarantee their effective capacity to protect individuals, and may instead reflect structures of power that fragment or neutralize the application of justice [Neumann 1942].

In light of these considerations, an international convention aimed at recognizing universal harm and establishing an *erga omnes* obligation for States to repair damage caused by wars and hostilities could be particularly relevant, especially in light of the conflicts in Ukraine, Gaza, and many other priority areas.

Recognizing the principle of universal harm and the obligation of compensation and restoration, not only with regard to direct victims but also in relation to ecosystems harmed by the use of force, appears here as a necessary step. The absence of such recognition effectively results in irreversible devastation of the environment, understood not only in a natural sense but also as a balance between society and territory. Countries heavily affected by military intervention face a significant rise in disease, both physical and psychological, and must contend with agriculture compromised by pollution levels incompatible with industrial food production. The only options left

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victims of the RTS tragedy in Belgrade, https://www.altalex.com/documents/news/2004/10/19/cassazione-civile-ss-uu-ordinanza-05-06-2002-n-8157

[27] ECHR, Markowicz v. Italy, application no. 78623/17, decision of 14 December 2021, available at HUDOC: https://hudoc.echr.coe.int/eng#{%22itemid%22:[%22001-78623%22]}, especially para. 114.

[28] Court of Cagliari. Judgment No. 9208/2004, 5 April 2011, Melis et al. v. Ministry of Defense. Filed with the Clerk's Office on 4 August 2011.

to local populations are emigration or dependence on international aid, feeding a condition of structural precariousness that undermines the possibility of economic and social reconstruction. In this context, the human and natural ecosystem – a central element for the sustainable management of the relationship between humanity and the biosphere – is seriously endangered.

From this perspective, the inclusion of the crime of ecocide among international crimes appears not only reasonable, but necessary.[29] However, before focusing attention on individual sanctions, it would be appropriate to consider the introduction of an *erga omnes* obligation for States, binding them to reconstruct damaged environments and to remedy areas devastated by armed conflict and systemic pollution. Such an approach would constitute a concrete application of the principle of restorative justice between States, grounded in the recognition of the universality of the harm inflicted on nature and society, while also ensuring a preventive and deterrent function.[30]

At the same time, universal harm could be understood within the framework of an ecology of the biosphere that recognizes its scope not only as a historical and social event, but also as a cosmic phenomenon. Considering ecological harm from this perspective means overcoming the fragmentation between human rights law and environmental law, placing at the center of legal analysis an awareness of the interdependence between the survival of humanity and the integrity of the ecosystems that support it. Otherwise, there is a risk that, in the sense suggested by Benjamin, law itself may be reduced to a form of violence, thereby assuming an irremediably catastrophic meaning [Benjamin 1921].

Finally, in the author's humble opinion, precisely in light of the limitations discussed above, recognizing and supporting those bottom-up forms of cooperation that societies and their components initiate to fulfill their duties toward nature and toward others may prove to be of fundamental importance, as an expression of a universal, participatory, and inclusive vocation.

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[29] Let us recall Falk's 1973 observations: "Article II. In the present Convention, ecocide means any of the following acts committed with the intent to disrupt or destroy, in whole or in part, a human ecosystem: (a) The use of weapons of mass destruction, whether nuclear, bacteriological, chemical, or other; (b) The use of chemical herbicides to defoliate and deforest natural forests for military purposes; (c) The use of bombs and artillery in such quantity, density, or size as to impair the quality of the soil or to enhance the prospect of diseases dangerous to human beings, animals, or crops; (d) The use of bulldozing equipment to destroy large tracts of forest or cropland for military purposes; (e) The use of techniques designed to increase or decrease rainfall or otherwise modify weather as a weapon of war; (f) The forcible removal of human beings or animals from their habitual places of habitation to expedite the pursuit of military or industrial objectives. Article III. The following acts shall be punishable: (a) Ecocide; (b) Conspiracy to commit ecocide; (c) Direct and public incitement to ecocide; (d) Attempt to commit ecocide; (e) Complicity in ecocide" [Falk 1973].

[30] This perspective may appear useful also in the perspective of the approach of the ICJ to climate change [Policastro 2025a].

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