

Nuclear Weapons Under International Law: An Overview

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This summary describes the regulation and status of nuclear weapons under international law, assessing applicable law as it stands (*lex lata*) and not as one might wish it to be (*lex desiderata*). It is based on *Nuclear Weapons Under International Law*, edited by Gro Nystuen, Annie Golden Bersagel and Stuart Casey-Maslen, and published by Cambridge University Press in August 2014. Sixteen international lawyers contributed to the book: Stuart Casey-Maslen, Louise Doswald-Beck, Annie Golden Bersagel, Torbjørn Graff Hugo, Nobuo Hayashi, Cecilie Hellestveit, Daniel H. Joyner, Erik V. Koppe, Martina Kunz, Don MacKay, Daniel Mekonnen, Jasmine Moussa, Gro Nystuen, Simon O'Connor, Marco Roscini, and Jorge E. Viñuales.

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Contents

Summary.....	2
Introduction.....	4
Types of nuclear weapons.....	4
History of use and testing.....	4
A. Use of nuclear weapons under international law.....	5
1. In the conduct of hostilities.....	5
2. Accountability for use of nuclear weapons under international law.....	7
3. Outside a situation of armed conflict.....	7
4. Use under <i>jus ad bellum</i>	8
B. Disarmament, non-proliferation, and the nuclear-weapons-free zones.....	10
1. Disarmament law obligations.....	10
2. Nuclear-weapons-free zones.....	11
C. The relevance of environmental law for nuclear weapons.....	13
1. International humanitarian law and the environment.....	13
2. Nuclear weapons and environmental treaties.....	13
3. Testing of nuclear weapons.....	14
Annexes.....	15
1. The conclusions of the ICJ Nuclear Weapons Advisory Opinion.....	15
2. A comparative review of treaties governing nuclear weapons.....	16
Notes.....	18

Summary

The legality of nuclear weapons under international law remains hotly contested. In fact, the 1996 Advisory Opinion by the International Court of Justice (ICJ) on the legality of the threat or use of nuclear weapons raised as many questions as it answered, while in some respects the state of relevant international law has evolved since 1996.

A central question is naturally whether nuclear weapons may ever be used in a way that respects the rules of *jus in bello*, especially the law applicable to the conduct of hostilities in a situation of armed conflict. Primary among the rules of international humanitarian law (IHL) is distinction in attacks, which requires parties to any conflict—international or non-international—to direct attacks only against lawful military objectives, whether persons or objects. However, even if an attack is so directed, the rule of proportionality dictates that civilian harm (deaths, injuries, damage to civilian objects, or a combination thereof) may not be expected to be excessive when compared with the direct and concrete military advantage anticipated. Arguably, expected environmental damage must also be assessed as part of the proportionality rule.

Broadly speaking, three scenarios have frequently been advanced for a lawful use of nuclear weapons, and two would not, *a priori*, involve a difficult proportionality assessment as the targets would be clear military objectives with little ambient civilian damage expected. The first of these scenarios is use against a nuclear-armed submarine on the high seas about to fire its missiles. While the high seas might suffer from environmental damage (and of course any civilian vessels in the vicinity might be destroyed with a concomitant loss of life), a case can be made that the attack does not violate primary IHL rules.

Second, a mass gathering of armed forces in the desert far away from populated areas has been advanced as a possible lawful target for a nuclear strike. Again, the proportionality element might be minimal, although here an additional IHL prohibition designed to protect combatants—on means and methods of warfare of a nature to cause superfluous injury or unnecessary suffering—would need to be assessed. Even if the rule does not operate as an absolute standard, it is extremely hard to conceive of circumstances when it could be deemed truly necessary to engender among those engaged in combat the horrific blast and burn injuries that nuclear weapons cause as well as the long-term physiological harm they inevitably inflict, including a significantly increased risk of cancer mortality.

Third, the potential use of nuclear weapons could be claimed to not violate IHL where it fulfilled the criteria for a belligerent reprisal (i.e. as a necessary response

to an earlier serious violation of IHL). However, it is a huge challenge to envisage circumstances where use of nuclear weapons against civilians could hope to meet the stringent requirements of a lawful reprisal in practice.

But even if it is possible, in theory, to envisage a limited use of nuclear weapons that does not violate IHL, human rights law would also apply, subject to jurisdictional rules. In the context of the right to life, international human rights courts primarily analyse whether sufficient effort was made to avoid or limit loss of life in cases where potentially lethal force cannot be avoided. The possible IHL justification that such loss is not excessive compared with the military advantage expected is not in practice a factor taken into account by such courts. This is important given the elastic nature that the ‘proportionality in attack’ rule seems to enjoy, and the fact that insufficient precautions in attack are not listed as ‘indiscriminate attacks’ as such under IHL. The positive obligations required under human rights law to ensure the proper respect of such law means that human rights courts insist that the law be effective, and not theoretical. Any use of nuclear weapons will, therefore, result in concrete human rights violations that are justiciable.

Furthermore, where use of nuclear weapons occurred by one state on the territory or against the armed forces of another (not the only possible scenario involving use, but arguably the most probable), then the requirements of *jus ad bellum* would also need to be satisfied. This body of law, which regulates the interstate use of force, would allow weapons, potentially including nuclear weapons, to be used in self-defence against an armed attack. To do so, the law would judge the necessity for the use of force and whether the force that was used was proportionate to the aim of repelling the attack. Perhaps a surprise to some, the law would not impose particular restrictions on nuclear weapons as a weapon type, but merely consider their use as one element in the use of force equations. Arguably, the same formula also applies to threats (*ad bellum*): threatening use of force by nuclear weapons is governed by the same legal framework as threats of the use of force in general.

Given that use of nuclear weapons could constitute violations of IHL rules, such acts would potentially also be subject to rules and proceedings under international criminal law (ICL). Use of nuclear weapons could, under certain circumstances, amount to genocide, crimes against humanity, and/or war crimes. This would seem to apply irrespective of the discrepancy between the 1998 Rome Statute of the International Criminal Court (ICC) and other international legal regimes, including customary law, when it comes to specific references to prohibited weapons.

Beyond use, the legality of development, testing, production, stockpiling, and transfer must also be assessed under international law. Arguably, a ban on atmospheric testing of nuclear weapons has now crystallized into customary international law; the same cannot, though, be said so easily with respect to underground testing. Already under the 1959 Antarctic Treaty any activity involving nuclear weapons, such as their testing, stockpiling, deployment, or launching in or from Antarctica is prohibited; similar provisions apply by treaty to nuclear weapons in outer space or on the sea bed.

In addition, the rapid development of environmental law, a branch of international law touched on by the ICJ in its 1996 Advisory Opinion, brings with it implications for the testing and release of pollutants at various stages of the weapons production cycle.

Only nine states possess nuclear weapons, but these states represent almost half the world's population and more than one quarter of the earth's land area. These nine states are currently not covered by the 1968 Nuclear Non-Proliferation Treaty (NPT)'s comprehensive prohibition on non-nuclear weapons states producing or otherwise acquiring nuclear weapons. These states include the five permanent members of the United Nations Security Council, which are recognized nuclear weapon states under the NPT, as well as the Democratic People's Republic of Korea, India, Israel, and Pakistan, which are not party to the NPT.

But though these states are not bound by multilateral treaty obligations that prohibit the acquisition and production of nuclear weapons, this does not mean that environmental law is irrelevant to these states' activities involving nuclear weapons. All stages of the 'life-cycle' of nuclear weapons may cause pollution of the environment, not only through radioactive substances but also through hazardous chemicals used in producing and maintaining these weapons. Indeed, it is argued that nuclear weapons states might be subject to environmental litigation or non-compliance procedures for breaching their international environmental obligations, even absent nuclear detonation.

And for those nuclear weapons states that are party to the NPT, Article VI on disarmament is especially pertinent. While disagreement persists regarding the precise nature and scope of the obligation in this provision, Article VI is a binding legal obligation, not merely a goal. Thus, when looking at the number of nuclear warheads today, more than 40 years after the treaty's entry into force, the NPT has proved less efficient with regard to nuclear disarmament obligations undertaken by the nuclear weapons states (NWS). Finally, the NPT is also seen in light of the legal

regimes pertaining to the two other weapons of mass destruction, especially the treaties on biological and chemical weapons. Contrary to what is the case for these two other weapons, the NPT does not contain a rule prohibiting use of nuclear weapons.

On the topic of armed non-state actors and nuclear materials, an extensive and far-reaching normative framework exists. The question is to what extent it is able to prevent nuclear terrorism.

Nuclear-weapons-free zones (NWFZs) provide complementary machinery to other measures of disarmament, non-proliferation of nuclear weapons, and the development of peaceful uses of nuclear energy. Since the end of the Cold War, the rationale for the bipolar nuclear arms race has diminished, and hence the rationale for keeping the nuclear weapons debate strictly within the hands of the NWS should by implication have diminished. The zone countries may thus have a greater potential for influencing the debates on nuclear weapons, in various settings, than currently appears to be the case. The potential of NWFZs in defusing the risk of regional nuclear arms races and decreasing the risk of nuclear weapons falling into the hands of non-state actors are also increasingly important security considerations for the major nuclear powers.

Introduction

In this introductory section the types of nuclear weapons that exist or which could be developed are described along with details of their testing and use. Section A then reviews their use under international law, both in the conduct of hostilities and as an act without the requisite nexus to a situation of armed conflict. Section B considers disarmament law and non-proliferation rules and measures as well as nuclear-weapons-free zones (which cover most of the southern hemisphere). Section C assesses the testing, production, and stockpiling of nuclear weapons under international environmental law.

Annex 1 contains the conclusions of the ICJ in its 1996 Nuclear Weapons Advisory Opinion. Annex 2 includes a comparative review of treaties governing nuclear weapons.

Types of nuclear weapons

A nuclear weapon is an explosive device whose destructive force results from either nuclear fission chain reactions or combined nuclear fission and fusion reactions. Nuclear weapons whose explosive force results exclusively from fission reactions are commonly referred to as atomic bombs, while those that derive much or most of their energy in nuclear fusion reactions are termed thermonuclear weapons (or hydrogen bombs).

In fission weapons, a mass of fissile material (enriched uranium or plutonium) is turned into a supercritical mass, producing explosive yields ranging from the equivalent of around one to five hundred kilotons of TNT. The detonation of any nuclear weapon is accompanied by a blast of radiation. Fission also produces radioactive debris, more commonly known as fallout.

A thermonuclear weapon uses the heat generated by a fission bomb to compress and ignite a nuclear fusion stage. Thermonuclear weapons typically have a far higher explosive yield than do fission weapons, in the range of megatons rather than kilotons. Fusion reactions do not create fission products, but because all thermonuclear weapons contain at least one fission

stage, thermonuclear weapons can generate at least as much nuclear fallout as fission-only weapons.¹

A ‘neutron’ bomb is a thermonuclear weapon that yields a relatively small explosion but a large amount of neutron radiation. A neutron bomb could be used to inflict massive casualties while leaving infrastructure mostly intact and creating a minimal amount of fallout.² In contrast, a salted bomb (surrounding a nuclear weapon with, for example, cobalt-60 or gold-98) would produce exceptionally large quantities of radioactive contamination.³

History of use and testing

The fear that the Nazis could develop nuclear weapons prompted United States (US) President Theodore Roosevelt to establish the Manhattan Project in 1941. The world’s first detonation of a nuclear weapon, the result of the Project’s work, occurred just before 5.30am on 16 July 1945 at a site in New Mexico. The first nuclear weapon attack occurred on 6 August 1945 over the city of Hiroshima in Japan. ‘Little Boy’, as the bomb was named, exploded 580 metres above the ground, rendering an explosive yield of some 16 kilotons of TNT. No one knows exactly how many tens of thousands of people were killed in the attack. Three days later the US detonated ‘Fat Man’, a plutonium bomb with a larger 20-kiloton yield, 610 metres above a suburb of Nagasaki, killing some 74,000 people.

The second state after the US to test a nuclear bomb successfully was Russia, which in 1949 detonated an atomic bomb, made with plutonium as its nuclear material. ‘Greenhouse George’, a US test fire in Nevada in May 1951, was the first fusion nuclear weapon to be detonated.⁴ The largest nuclear explosion ever is believed to be Russian in origin: its explosive yield amounted to 50 megatons. The largest US nuclear detonation, equivalent to 15 megatons, occurred on Bikini Atoll in May 1954. Other nuclear weapon states are India, Israel, and Pakistan as well as the Democratic People’s Republic of Korea (DPR Korea) which conducted an underground test of a low-yield nuclear device in October 2006.

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- 1 Pure fusion weapons—fusion reactions without the need for a fission bomb to initiate them—would create significantly less nuclear fallout than other thermonuclear weapons, because they would not disperse fission products. However, no known, credible design for a pure fusion weapon currently exists.
 - 2 A ‘positron’ bomb could use antimatter as a trigger for nuclear weapons or even as a weapon in itself, should production of antimatter in sufficient quantities ever become possible. If electrons or protons collide with their antimatter counterparts, they annihilate each other, unleashing more energy than any other known energy source (10 billion times that of high explosives), along with a burst of gamma radiation that could kill massive numbers of people without ejecting radioactive fallout.
 - 3 A salted bomb should not be confused with a ‘dirty bomb’, an ordinary chemical explosive device containing radioactive material that is spread over the area when the device explodes.
 - 4 Russia detonated a hydrogen bomb in 1952, the UK in 1955, China in 1967, and France in 1968.

A. Use of nuclear weapons under international law

Any future use of a nuclear weapon, should one occur, is likely to be in the conduct of hostilities within an international armed conflict.⁵ Accordingly, any such use of a nuclear weapon would be judged under the applicable international laws, *jus ad bellum* (international law governing the interstate use of force) and *jus in bello* (international law applicable in armed conflict).⁶

1. In the conduct of hostilities

The primary rules under *jus in bello* are found in the law of armed conflict, which today is widely termed international humanitarian law (IHL). Under IHL, while states 'do not have unlimited freedom of choice of means in the weapons they use',⁷ there is no requirement that each weapon be specifically 'authorized' for its use to be lawful; use of any given weapon will only be unlawful when, and to the extent that, it is prohibited by an applicable conventional or customary rule.

A fundamental rule of IHL stipulates that parties to a conflict must direct attacks only against lawful military objectives (whether military personnel or objects of concrete military value). The rule of distinction in attacks⁸ is a norm of customary international law, applicable in non-international armed conflicts as it is in international armed conflicts. Accordingly, any weapon that is incapable of distinguishing between civilians/civilian objects and military targets is considered inherently indiscriminate and its use is always unlawful.⁹

A supporting rule, that of proportionality in attacks, holds that even if an attack is effectively directed against military objectives, civilian harm (deaths, injuries, damage to civilian objects, or a combination

thereof) it must not be launched if it may be expected to be excessive when compared with the direct and concrete military advantage anticipated. Arguably, environmental damage must also be assessed as part of the proportionality rule.

In his separate opinion in relation to the International Court of Justice (ICJ)'s 1996 *Advisory Opinion on the Legality of the Threat or Use of Nuclear Weapons* (the Nuclear Weapons Advisory Opinion), Judge Schwebel speculated on different types of uses of nuclear weapons and which of these might be lawful or not. He referred to the regularly projected scenario of use of tactical nuclear weapons against submarines that are themselves equipped with nuclear weapons as 'discrete military or naval targets so situated that substantial civilian casualties would not ensue'.¹⁰ Citing the example of use of a nuclear 'depth-charge' to destroy a submarine about to fire nuclear missiles (or which has already fired one or more nuclear missiles) he concludes this 'might well be lawful'. Indeed, an argument can be made that in such a situation use of a nuclear weapon might not violate IHL.¹¹

A second oft-cited scenario concerns use of a nuclear weapon to destroy an enemy army situated in a desert. Judge Schwebel concluded, justly, that in 'certain circumstances, such a use of nuclear weapons might meet the tests of discrimination and proportionality; in others not.' But this scenario also evokes another general rule of IHL, namely the prohibition of the use of means and methods of warfare of a nature to cause superfluous injury or unnecessary suffering (the unnecessary suffering rule). This prohibition is one of the very scarce IHL rules designed to protect combatants while they are participating directly in hostilities.

The explosion of a nuclear weapon creates phenomenal quantities of heat upon detonation: between 60 and 100 million degrees centigrade.

5 Conceivably a nuclear weapon detonation could be also the act that triggers the international armed conflict.

6 Since an express prohibition of use of nuclear weapons is included in the Treaties of Bangkok, Semipalatinsk and Tlatelolco, any use by a state party to any of these treaties would clearly violate international law.

7 International Court of Justice (ICJ), *Nuclear Weapons Advisory Opinion*, 1996, §78.

8 The rule is sometimes referred to as a principle, either of distinction or of discrimination.

9 See, e.g., International Committee of the Red Cross (ICRC) Study of Customary IHL, Rule 71, www.icrc.org/customary-ihl/eng/docs/v1_rul_rule71.

10 Separate Opinion of Judge Schwebel, *Nuclear Weapons Advisory Opinion*, p. 98.

11 It assumes, though, that the location of the submarine is known precisely (no small assumption in the case of nuclear weapon-equipped submarines); that nuclear weapons can be fired in a timely fashion (having secured the necessary authority high up the chain of command); and that the requisite proportionality calculations have been made, including the determination that alternative, less harmful weapons would not be sufficient to achieve the military task.

Anyone within a radius of 2.5km from ground zero¹² and who is unprotected will receive third-degree (full thickness) burns, which will almost certainly be fatal. What is unique about nuclear weapons is the radiation, which occurs at different times. 'Prompt' radiation comes first, soon after the explosion, consisting of neutrons, gamma rays, and electrons. Neutron radiation is an especially hazardous form of radiation to humans. In the explosion of a nuclear weapon, the fireball rises, sucking the cooler air below as well as radioactive debris up from the ground. Water drops are extracted from the cooler air to form clouds. Fallout begins one to two hours afterwards and lasts for a day or so.

The horrific blast and burn injuries nuclear weapons would likely inflict on hundreds of thousands of people across a huge area in the instant following detonation are dramatically enhanced by the lethal doses of radiation that would kill in the ensuing days and weeks. But the long-term impact of nuclear weapons also means a significantly increased risk of cancer mortality throughout the life of the survivors. How the temporal aspect of the unnecessary suffering rule, namely the fact that injury or suffering does not manifest itself immediately, is to be understood, requires further analysis. That said, given the characteristics that would ordinarily manifest themselves from exposure to radiation, it is fair to contend that this issue must be taken into account in applying the rule. It is extremely hard to envisage a situation where military considerations would dictate the necessity of recourse to nuclear weapons and that could justify their use against combatants, given the humanitarian effects.

A third scenario in which use of nuclear weapons has been claimed to be lawful is as a belligerent reprisal. The term reprisal describes an act that would normally be unlawful under IHL, but which is not prohibited insofar as it seeks to cause an opposing party to the conflict to cease the commission of acts that violate IHL. To be lawful a reprisal must be a necessary response to a serious and *prior* unlawful act (or acts) by the target state (and not one of its allies); must be conducted with a view to bringing the target state back

into compliance with IHL;¹³ and should be announced as such. Unlawful acts carried out as mere retaliation or punishment therefore remain unequivocally unlawful. In addition, to be lawful the ostensible act or acts of reprisal must be proportionate to the original breach.

Many objects and persons enjoy special protection against reprisals.¹⁴ The 1977 Additional Protocol I, which applies to international armed conflicts, stipulates that attacks against the civilian population or civilians by way of reprisals are prohibited. A number of states have protested against this rule. The UK, for instance, when ratifying the Protocol in 1998 attached an understanding whereby if an 'adverse party makes serious and deliberate attacks ... against the civilian population or civilians or against civilian objects' the UK would consider itself 'entitled' to take otherwise prohibited measures 'necessary for the sole purpose of compelling the adverse party to cease committing violations ... but only after formal warning to the adverse party requiring cessation of the violations has been disregarded and then only after a decision taken at the highest level of government'.¹⁵

However, were either the Russian Federation or the US ever to launch a major strike against the other, owing to the inevitability of the response such a first strike attack would presumably be all-out, with a view to total destruction, or as near to it as could be achieved. The intent of the huge nuclear response that would likely ensue could hardly be claimed to be pursuant to any intent to restore compliance with the law; it would be simple, uncloaked retaliation: collective punishment for as massive a violation of IHL as it is possible to contemplate. Such a nuclear response could thus not be considered a reprisal and, as unfair as it might seem, equally wrong in the eyes of the law.

In its Nuclear Weapons Advisory Opinion, the ICJ concluded that any use of nuclear weapons would 'generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law'.¹⁶ For any given use of nuclear weapons to satisfy the legal requirements, the circumstances of use would have

¹² The Strategic Bombing Survey of the 1945 atomic bomb attacks, released in June 1946, used the term ground zero to 'designate the point on the ground directly beneath the point of detonation'. *US Strategic Bombing Survey: The Effects of the Atomic Bombings of Hiroshima and Nagasaki*, 19 June 1946, p. 5.

¹³ Thus, a reprisal is not a synonym for *tu quoque*, the (non-)defence to a criminal charge, whereby if one party in a conflict has committed certain crimes, it has no authority to prosecute or punish individuals from an opposing party for similar crimes.

¹⁴ These include persons in the power of a party to an international armed conflict, including the wounded, sick and shipwrecked; medical and religious personnel; captured combatants; civilians in occupied territory; and other categories of civilians in the power of an adverse party to the conflict, notably civilian internees. It is also unlawful to conduct reprisals against medical buildings, vessels, and equipment protected by 1949 Geneva Conventions I and II or against cultural property protected under the 1954 Hague Convention for the Protection of Cultural Property.

¹⁵ Reproduced in A. Roberts and R. Guelff, *Documents on the Law of War*, 3rd edn, Oxford University Press, 2001, pp. 511–12.

¹⁶ Nuclear Weapons Advisory Opinion, dispositive E.

to be truly exceptional.¹⁷ But such circumstances do exist, notably with respect to low-yield nuclear weapons, and it therefore remains unpersuasive to argue that all nuclear weapons are either inherently indiscriminate or inherently disproportionate under IHL.

A separate question raised by the ICJ in its Advisory Opinion was that threats of use of nuclear weapons also constitute a violation of IHL rules in general. Arguably, however, IHL in general does not regulate threats, save in a few explicit cases. This question, which seems rather limited in scope and impact, plays a role in the general confusion generated by the ICJ's Advisory Opinion regarding the separation between *jus in bello* and *jus ad bellum*.

2. Accountability for use of nuclear weapons under international law

Given that use of nuclear weapons could constitute violations of IHL rules, such acts would potentially also be subject to rules and proceedings under international criminal law (ICL). Use of nuclear weapons could, under certain circumstances and according to varying liability modes, constitute genocide, crimes against humanity, and/or war crimes. This would seem to apply irrespective of the discrepancy between the 1998 Rome Statute of the International Criminal Court (ICC) and other international legal regimes, including customary law, when it comes to specific references to prohibited weapons. The lack of explicit ICC jurisdiction with regard to nuclear weapon use in the ICC Statute hardly precludes the categorization of such use as an international crime under other legal regimes, and subject to national prosecution.

3. Outside a situation of armed conflict

Human rights law

In addition to a purely IHL analysis, however, international human rights law is also relevant to a determination of the legality of use of nuclear weapons. In the context of the right to life, international human rights courts primarily analyse whether sufficient effort was made to avoid or limit loss of

life in cases where potentially lethal force cannot be avoided. The possible IHL justification that such loss is not excessive compared with the military advantage expected is not in practice a factor taken into account by such courts. This is important given the elastic nature that the IHL 'proportionality in attack' rule seems to enjoy, and the fact that insufficient precautions in attack are not listed as 'indiscriminate attacks' as such under IHL. The positive obligations required under human rights law to ensure the proper respect of such law means that human rights courts insist that the law be effective, and not theoretical. Any use of nuclear weapons will, therefore, result in concrete human rights violations that are justiciable provided that the responsible state has jurisdiction with regard to that use.

It is highly improbable that any use of a nuclear weapon by a state would occur outside an armed conflict, but it is not inconceivable. Potentially, such an act would amount to genocide when 'committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such'.¹⁸ If it were undertaken as part of a widespread or systematic attack against a civilian population where the perpetrator has knowledge of the attack, it could amount to a crime against humanity. According to the International Criminal Tribunal for the former Yugoslavia (ICTY), a widespread attack may be the 'cumulative effect of a series of inhumane acts or the singular effect of an inhumane act of extraordinary magnitude'.¹⁹

Non-state armed groups

Arguably more probable is use of a nuclear weapon by a non-state actor as an act of terrorism. The 9/11 Commission Report cited testimony in February 2004 by George Tenet, the Director of the US Central Intelligence Agency, who warned that al-Qaeda 'continues to pursue its strategic goal of obtaining a nuclear capability'. Tenet also asserted that 'more than two dozen other terrorist groups are pursuing CBRN [chemical, biological, radiological and nuclear] materials'.²⁰ Also according to the 9/11 Commission Report, Khalid Sheikh Mohammed admitted he considered proposing to target a nuclear power plant in the 9/11 attacks and claimed that Mohammed Atta included a nuclear plant in his preliminary target list, but that Bin Laden decided to drop that idea.²¹

17 No realistic scenario exists for lawful use of nuclear weapons in a non-international armed conflict. The ICJ did not consider the legality of such use in its Advisory Opinion, noting that: 'The terms of the question put to the Court by the General Assembly in resolution 49/75 K could in principle also cover a threat or use of nuclear weapons by a State within its own boundaries. However, this particular aspect has not been dealt with by any of the States which addressed the Court orally or in writing in these proceedings. The Court finds that it is not called upon to deal with an internal use of nuclear weapons.' Nuclear Weapons Advisory Opinion, §50.

18 Art. 2, 1948 Convention on the Prevention and Punishment of the Crime of Genocide.

19 ICTY, *Prosecutor v. Dusko Tadić*, Judgment (Trial Chamber) (Case No. IT-94-1), 7 May 1997, §648.

20 Testimony of George Tenet, 'The Worldwide Threat 2004: Challenges in a Changing Global Context', before the US Senate Select Committee on Intelligence, 24 February 2004; see also 9/11 Commission Report, 2004.

21 9/11 Commission Report, 2004, Chapter 12, endnote 148.

However, if the likelihood of a terrorist group procuring or building a nuclear weapon is generally deemed remote, the risk of one gaining access to sufficient fissile material to create a dirty bomb and then detonating it is far higher.²² The treaty regime prohibiting armed non-state actors' access to nuclear weapons and material is fragmented and often overlapping.²³ As a result of US concern, on 28 April 2004 the United Nations (UN) Security Council, acting under Chapter VII of the Charter, adopted Resolution 1540 without a vote, in which it affirmed that the proliferation of nuclear, chemical, and biological weapons and their means of delivery constitute a threat to international peace and security and obliged all states to: 'refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery.'²⁴

4. Use under *jus ad bellum*

In parallel, and distinct from, determinations under IHL and human rights law of the legality of any future use of nuclear weapons, if use by a state were to occur on the territory or against the armed forces of another,²⁵ the requirements of *jus ad bellum* would also need to be satisfied. This body of law, which regulates the interstate use of force, would allow for weapons, potentially including nuclear weapons, to be used in self-defence against an armed attack. To do so, the law would judge the necessity for use of force and whether the force that was actually used was proportionate to the aim of repelling the attack.

Necessity *ad bellum* concerns the circumstances in which the state exercising its right of self-defence may lawfully use force, namely that there be no reasonable alternative to using force. This does not appear to require exhaustion of all peaceful measures. In its judgment in the Oil Platforms case,²⁶ the ICJ seems to have considered necessity *ad bellum* to require the contemporaneous and bona fide belief on the part of the state claiming self-defence that the necessity for its particular action existed. In fact, it is thought highly unlikely that, under modern *jus ad bellum*, absence of such belief conclusively negates necessity claims, nor does its existence conclusively establish necessity.

Arguably, however, when an armed attack has not yet occurred imminence (i.e. close temporal proximity between an offending state's future attack and the force to which the defending state resorts) is an element of necessity *ad bellum*.

With respect to the proportionality calculation, there are two requirements. First, force used in self-defence should be assessed in light of the fulfilment of defensive purposes. Second, the amount of force used in self-defence should not be obviously excessive; it does not, though, need to be strictly proportionate to the offensive force. Perhaps a surprise to some, the law would not impose particular restrictions on nuclear weapons as a *weapon type*, but merely consider their use as one element in the use of force equations. Arguably, the same formula also applies to threats *ad bellum*: threatening use of force by nuclear weapons is governed by the same legal framework as threats of the use of force in general.

In its Nuclear Weapons Advisory Opinion, the ICJ found, by seven votes to seven, with the president's casting vote, that: 'in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether ... use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake.'²⁷

This has sometimes been understood to conflate the question of whether the legitimacy of an *ad bellum* cause may justify the use of nuclear weapons in violation of *jus in bello*. The question of whether the separation principle between the two bodies of international law remains valid is central to this assessment. Although debate on the validity of the separation principle is largely doctrinal, it also has important practical implications, particularly in relation to the use of nuclear weapons. Although state practice in some cases has disregarded the separation principle, this can be considered a departure from treaty and customary international law, as confirmed by international criminal courts and tribunals and the 2001 Articles on the Responsibility of States for Internationally Wrongful Acts.

22 According to the International Atomic Energy Agency (IAEA), 'the radioactive materials needed to build a "dirty bomb" can be found in almost any country in the world, and more than 100 countries may have inadequate control and monitoring programs necessary to prevent or even detect the theft of these materials.' IAEA, 'Inadequate Control of the World's Radioactive Sources', undated, p. 1, www.iaea.org/newscenter/features/radsources/rads_factsheet.pdf.

23 Perhaps the most comprehensive is the 2005 International Convention for the Suppression of Acts of Nuclear Terrorism, according to which 'unlawful and intentional' possession, use, or threat or use of radioactive material or a device, or actual or threatened use or damage of a nuclear facility, as well as complicity in such acts, are all criminalized acts.

24 In total (depending on how they are counted) the Resolution creates more than 200 legally binding obligations for each state.

25 This is not the only possible scenario involving use of nuclear weapons, but arguably it is the most probable.

26 ICJ, *Oil Platforms case (Islamic Republic of Iran v. United States of America)*, Judgment, 6 November 2003.

27 Nuclear Weapons Advisory Opinion, dispositive E.

The 'conflationist' position, which seeks to subordinate *jus in bello* to *jus ad bellum*, is based on an incorrect understanding of the law. In practical as well as legal terms, IHL would disintegrate as a result of linking its application to the perceived lawfulness of the *ad bellum* use of force. Moreover, the 'conflationist' view appears to be linked in particular to a flawed understanding of the two aspects of proportionality analysis under each of the two branches of international law. The application of the proportionality principle under *jus ad bellum* is intended to limit the degree of damage that can be inflicted on the enemy to what is proportionate to repelling the attack. Conflating the two proportionality principles in such a manner transforms it from a principle of limitation to one that can be invoked to justify a degree of injury and destruction that would otherwise be considered clearly excessive in the proportionality equation under *jus in bello*. Neither treaty nor customary international law supports such a proposition, which is why the use of nuclear weapons in a manner that violates IHL cannot be considered consistent with international law irrespective of the situation under *jus ad bellum*.

The ICJ does, though, appear to have been guilty of 'conflationism' in its statement in the Nuclear Weapons Advisory Opinion that 'If an envisaged use of weapons would not meet the requirements of humanitarian law, a threat to engage in such use would also be contrary to that law'.²⁸ This statement seems to be largely without legal support, at least from a *lex lata* point of view. The threat of use of force, prohibited under the UN Charter, has thus been included in the *jus in bello* debate without sufficient legal justification.

28 Nuclear Weapons Advisory Opinion, §78.

B. Disarmament, non-proliferation, and the nuclear-weapons-free zones

Non-proliferation of nuclear weapons and the legality of their testing, production, and stockpiling are determined by reference to both disarmament law and, potentially, environmental law. The non-proliferation treaty regime and the nuclear-weapons-free zones are discussed here.

1. Disarmament law obligations

The centrepiece of the disarmament regime relating to nuclear weapons is the 1968 Nuclear Non-Proliferation Treaty (NPT), which entered into force in 1970, and which has since gained near universal adherence.²⁹ The Treaty has been termed a 'grand bargain' in which the non-nuclear weapon states (NNWS) forsake the nuclear option in exchange for a legal obligation on the part of the nuclear weapon states (NWS)³⁰ to refrain from transferring the weapons to any other states, and to disarm and eventually eliminate their arsenals. In addition to the non-proliferation elements in Article I³¹ and Article II,³² the Treaty guarantees all parties the 'inalienable right' to peaceful uses of nuclear technology in Article IV, and, in Article VI, also requires the NWS to 'pursue negotiations in good faith' towards the reduction and eventual elimination of nuclear arsenals.

Since the primary purpose of the Treaty was to prevent further proliferation of nuclear weapons, the NPT has played and continues to play a crucial role in limiting nuclear arsenals in the world, and to limiting the number of states with access to nuclear weapons. Although there are 'cracks' in the non-proliferation pillar walls, such as the fact that India, Israel, and Pakistan never acceded to it, and DPR Korea withdrew from the Treaty (asserting that it had the right to do

so under Article X of the NPT),³³ the overall aim of preventing proliferation of nuclear weapons to NNWS has largely been achieved.

The NPT has, though, come under increasing pressure mainly due to a lack of implementation of the disarmament elements of the treaty. Indeed, Article VI remains a constant source of debate (and tension) between NWS and NNWS that are states parties to the Treaty. In all its jurisprudence the ICJ has commented on the interpretation of Article VI only once, in the Nuclear Weapons Advisory Opinion, in which it adopted an expansive interpretation of the legal obligation:

The legal import of that obligation goes beyond that of a mere obligation of conduct; the obligation involved here is an obligation to achieve a precise result – nuclear disarmament in all its aspects – by adopting a particular course of conduct, namely, the pursuit of negotiations on the matter in good faith.³⁴

Furthermore, in dispositive F in the Advisory Opinion, the judges of the ICJ stated, unanimously, that 'there exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.' Thus, while disagreement persists regarding the precise nature and scope of the obligation in this provision, Article VI is a binding legal obligation, not merely a goal. Moreover, the duty to pursue negotiations 'in good faith' – a legal term with content and a body of established jurisprudence – indicates that efforts to merely pay lip service to the idea of negotiation do not suffice. Accordingly, when compared to the actual state practice of the nuclear weapon states, each of

29 In 1995, the NPT states parties extended the Treaty's initial lifetime of twenty-five years indefinitely.

30 Under the Treaty, NWS are specifically defined as those states that manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967. This definition encompasses the five permanent members of the UN Security Council: China, France, Russia, the UK, and the US.

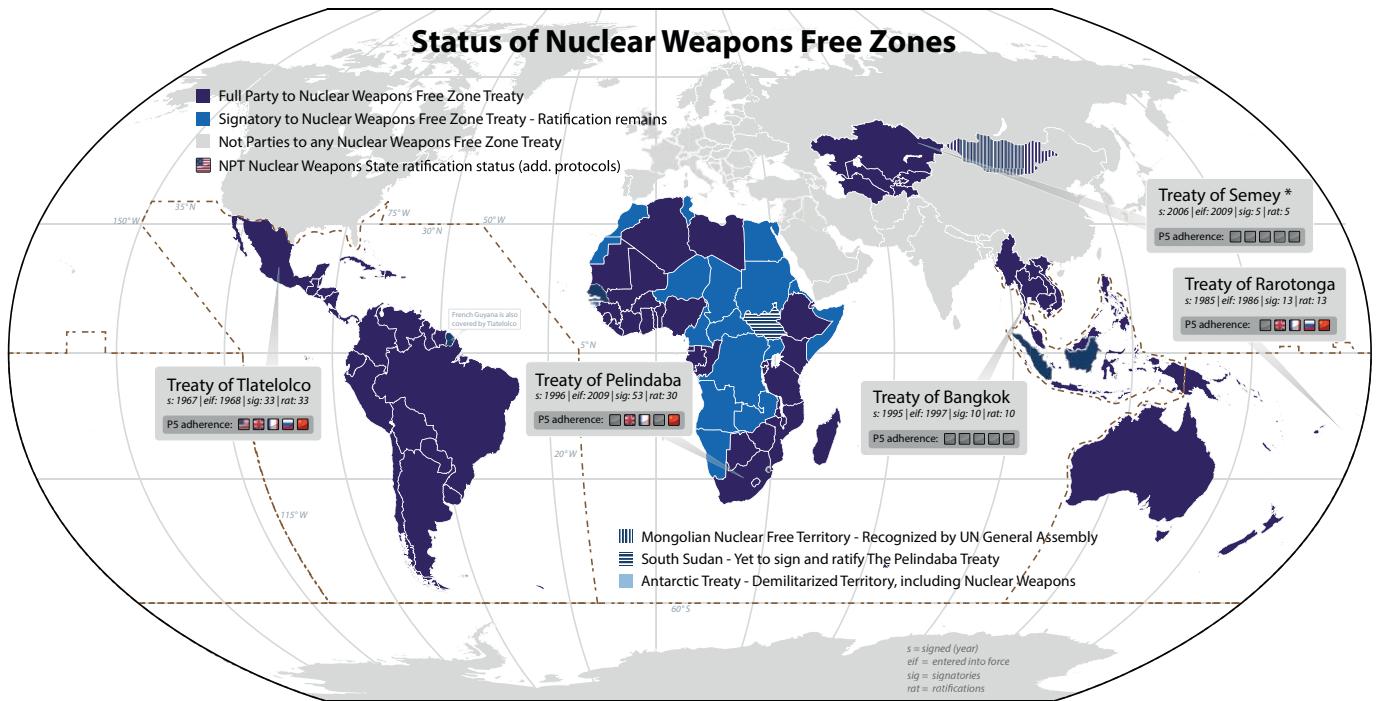
31 Art. I obliges each NWS party, *inter alia*, 'not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly...'. The absence of a definition of nuclear weapons enabled the US to interpret the term nuclear weapons as encompassing only nuclear warheads and not delivery systems, and thereby lawfully to sell missiles to the UK, equipped with everything but the warheads.

32 Under Art. II, each NNWS party undertakes, *inter alia*, not to: 'receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices....'

33 Each state party has the 'right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.'

34 Nuclear Weapons Advisory Opinion, §99.

Figure 1



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* Also known as Treaty of Semipalatinsk

those states that are party to the NPT can be said to be currently in non-compliance with the Article VI obligation relating to nuclear disarmament.

2. Nuclear-weapons-free zones

Article VII of the NPT supports the establishment of nuclear-weapons-free zones (NWFZs) as a regional component of the non-proliferation regime. According to the UN General Assembly, an NWFZ has two essential components: the total absence of nuclear weapons within the zone and the presence of an international verification and control machinery.³⁵

Five treaties establishing NWFZs have been concluded so far: the 1967 Treaty of Tlatelolco for the Prohibition of Nuclear Weapons in Latin America and the Caribbean, the 1985 Treaty of Rarotonga on the South Pacific NWFZ, the 1995 Bangkok Treaty on the South-East Asia NWFZ, the 1996 Pelindaba Treaty on the African NWFZ, and the 2006 Semipalatinsk Treaty on an NWFZ in Central Asia. All five treaties have entered into force. Mongolia has also unilaterally declared itself a nuclear weapon-free state while Antarctica is free of weapons of mass destruction

(WMDs) as a consequence of the 1959 Treaty cited above. Together, these zones cover the entire Southern hemisphere and one unstable region in the Northern hemisphere (see Figure 1).

By ratifying a NWFZ treaty, states first of all commit themselves not to possess or accept on their territory 'nuclear weapons' or 'nuclear explosive devices'. The obligation not to possess applies to all zonal states and extends to all forms of control by the respective states parties anywhere,³⁶ as well as to manufacture and acquisition. The Bangkok, Pelindaba, Rarotonga, and Semipalatinsk Treaties specify that the definition of 'nuclear weapon' or 'nuclear explosive device' does not include the means of transport or delivery of such a weapon or device 'if separable from and not an indivisible part of it'. Missiles capable of delivering nuclear weapons are therefore not prohibited by those treaties.

The second fundamental provision contained in the NWFZ treaties is the prohibition of stationing nuclear weapons or nuclear explosive devices within the zone.³⁷ This prohibition distinguishes the NWFZ treaties from the NPT, which does not prohibit the presence of nuclear weapons on the territory

35 In 1975, the General Assembly defined an NWFZ as: 'any zone, recognized as such by the General Assembly of the United Nations, which any group of States in the free exercise of their sovereignty, has established by virtue of a treaty or convention whereby: (a) the statute of total absence of nuclear weapons to which the zone shall be subject, including the procedure for the delimitation of the zone, is defined; (b) an international system of verification and control is established to guarantee compliance with the obligations deriving from that statute.' UN General Assembly Resolution 3472(XXX)B, adopted on 11 December 1975.

36 This means not only within but also outside the zone, e.g. in a military base situated in an allied state not included in the NWFZ.

37 This is defined in Art. 1(c) of the Semipalatinsk Treaty as 'implantation, emplacement, stockpiling, storage, installation and deployment'.

of NNWS, providing they do not acquire control over them.³⁸ In contrast, the Treaties of Bangkok, Pelindaba, Rarotonga, Semipalatinsk, and Tlatelolco prohibit the presence of nuclear explosive devices within the zones, regardless of which state owns or controls them.

While proposals for an NWFZ in the Middle East were put forward as early as 1962, in 1974 Iran and Egypt formally submitted a draft resolution to the UN General Assembly calling for the establishment of such a zone.³⁹ In 1990, Egypt proposed to broaden the scope of the zone and turn it into a WMD-free zone so as to encompass not only Israel's nuclear programme, but also the chemical and biological weapons possessed by other Middle Eastern states. Since the 1980s the UN General Assembly has annually adopted a resolution supporting the initiative.⁴⁰

However, the conference for a WMD-free zone in the Middle East, called for by the NPT 2010 Review Conference and supposed to take place in December 2012, has been postponed sine die. Although it was never intended to be a drafting conference, it would have been an important step in the negotiation and eventual adoption of a treaty establishing such a zone. A worst-case scenario is that the possible abandonment of the WMD-free zone project will accelerate disaffection among Middle Eastern states towards the NPT, leading eventually to a chain of withdrawals from the Treaty. On the other hand, even though the language of Article X of the NPT is broad, it would seem difficult to categorise the postponement or even the demise of the WMD-free zone project as 'extraordinary events, related to the subject matter of this Treaty, [that] have jeopardized the supreme interests' of the Middle Eastern NPT states parties, allowing lawful withdrawal from the NPT.

Despite the challenges, NWFZs provide complementary machinery to other measures of disarmament, non-proliferation of nuclear weapons, and the development of peaceful uses of nuclear energy. Covering large geographical areas and a large number of states, such zones represent an underestimated legal and political dynamic with regard to disarmament as well as non-proliferation. The potential of NWFZs in defusing the risk of regional nuclear arms races and decreasing the risk of nuclear weapons falling into the hands of non-state actors are also increasingly important security considerations for the major nuclear powers.

38 For instance, about ninety nuclear warheads are thought to be stationed in the US Ghedi Torre and Aviano military bases in Italy.

39 UN General Assembly Resolution 3263(XXIX), adopted on 9 December 1974.

40 The most recent is UN General Assembly Resolution 68/27, adopted without a vote on 5 December 2013.

C. The relevance of environmental law for nuclear weapons

1. International humanitarian law and the environment

The most common approach to analysing the environmental regulation of nuclear weapons under international law has been through the lens of IHL. This has resulted in detailed assessments of the environmental coverage of some *jus in bello* instruments and rules. The IHL approach centres on Articles 35(3) and 55 of the 1977 Additional Protocol I and on customary international law, as well as the proscription of a certain level of harm to the environment during hostilities under international criminal law.

Regarding the continued application of general environmental law treaties during situations of armed conflict, in its Nuclear Weapons Advisory Opinion the ICJ rejected the challenge by certain NWS but stated its view that:

the issue is not whether the treaties relating to the protection of the environment are or are not applicable during an armed conflict, but rather whether the obligations stemming from these treaties were intended to be obligations of total restraint during military conflict. ... The Court does not consider that the treaties in question could have intended to deprive a State of the exercise of its right of self-defence under international law because of its obligations to protect the environment.⁴¹

2. Nuclear weapons and environmental treaties

However, resort to nuclear weapons presupposes their production, testing, stockpiling, transportation, and deployment before actual use in hostilities. International law governs parts of this more complex regulatory object in ways that have, thus far, attracted less attention.

Only nine states possess nuclear weapons, but these states represent 47% of the world's population and 28% of the earth's land area. These nine states are currently not covered by the NPT's comprehensive prohibition of NNWS producing or otherwise acquiring nuclear weapons. These states include the five recognized NWS under the NPT, as well as DPR Korea, India, Israel, and Pakistan, which are not party to the NPT.

But though these states are not bound by multilateral treaty obligations that explicitly and comprehensively prohibit acquisition, transfer, production, development, or stockpiling, this does not mean that environmental law is irrelevant to these states' activities involving nuclear weapons. All stages of the 'life-cycle' of nuclear weapons may cause pollution of the environment, not only through radioactive substances but also through hazardous chemicals used in producing and maintaining these weapons.

Environmental treaties can be distinguished according to the environmental sphere they are designed to protect: atmosphere (air quality, ozone layer, climate change), hydrosphere (marine and fresh water), lithosphere (land and mineral resources), and biosphere (life in any of the other spheres). Radiological contamination stemming from nuclear weapon-related activities can occur in any of these four spheres and typically spreads to all of them through ecological cycles, air and water currents, and through migratory species. The state from whose territory the nuclear weapon pollution originates may thus be found in breach of a treaty that protects the affected spheres, or of corresponding norms of customary international law.⁴² Thus, it is argued that nuclear weapon states might be subject to environmental litigation or non-compliance procedures for breaching their international environmental obligations, even absent nuclear detonation.

41 Nuclear Weapons Advisory Opinion, §30.

42 If pollution originating in nuclear weapon-involving activities of one state can be found to have an impact on another state's territory, this constitutes a classic example of transboundary pollution to which the principle of 'no harm' and the prevention principle, as codified in Principle 21 of the 1972 Stockholm Declaration on the Human Environment and Principle 2 of the 1992 Rio Declaration on Environment and Development, would apply. Both principles are of a customary nature when the harm is significant. Relevant procedural rules under the umbrella of the well-established duty to cooperate include the conventional and customary duty to notify and the duty to conduct an environmental impact assessment. See ICJ, *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, 20 April 2010, §204.

3. Testing of nuclear weapons

Beyond these broader disarmament obligations, arguably a ban on atmospheric testing of nuclear weapons has now crystallized into customary international law. The same cannot, though, be said so easily with respect to underground testing. But the Rarotonga, Bangkok, Pelindaba and Semipalatinsk Treaties (discussed further below) obligate states parties not to conduct nuclear tests and require them to prevent such tests in their territories. They do so regardless of test yield, and whether tests are conducted in the atmosphere or underground.⁴³ Moreover, already under the 1959 Antarctic Treaty any activity involving nuclear weapons, such as their testing, stockpiling, deployment, or launching in or from Antarctica is prohibited;⁴⁴ similar prohibitions apply by treaty to nuclear weapons in outer space⁴⁵ and on the sea bed.⁴⁶

Summing up, it should be noted that there is no unequivocal and explicit rule under international law against use of nuclear weapons, although, in particular, IHL significantly restricts the possibility for lawful use. With regard to possession, production, and stockpiling of nuclear weapons, a number of regimes constitute important regulatory frameworks that to a large degree have prevented nuclear proliferation. In contrast to other legal regimes pertaining to weapons of mass destruction, which have been banned because it is assumed that their use cannot comply with IHL requirements, nuclear weapon use, production, transfer, and possession is not explicitly prohibited. Disarmament obligations on the nuclear weapons states remain contested, and remain challenging to enforce.

43 Art. 18 of the Treaty of Tlatelolco allows nuclear explosions for peaceful purposes, but regional states and the nuclear powers have interpreted this provision as prohibiting all explosions.

44 According to Art. I(1): 'There shall be prohibited, inter alia, any measure of a military nature, such as the establishment of military bases and fortifications, the carrying out of military manoeuvres, as well as the testing of any type of weapon.' Under Art. V, 'Any nuclear explosions in Antarctica and the disposal there of radioactive waste material shall be prohibited.'

45 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.

46 1970 Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof.

Annexes

1. The conclusions of the ICJ Nuclear Weapons Advisory Opinion

105. ... The Court

(1) By thirteen votes to one,

Decides to comply with the request for an advisory opinion;

IN FAVOUR: President Bedjaoui; Vice-President Schwebel; Judges Guillaume, Shahabuddeen, Weeramantry, Ranjeva, Herczegh, Shi, Fleischhauer, Koroma, Vereshchetin, Ferrari Bravo, Higgins;

AGAINST: Judge Oda;

(2) Replies in the following manner to the question put by the General Assembly:

A. Unanimously,

There is in neither customary nor conventional international law any specific authorization of the threat or use of nuclear weapons;

B. By eleven votes to three,

There is in neither customary nor conventional international law any comprehensive and universal prohibition of the threat or use of nuclear weapons as such;

IN FAVOUR: President Bedjaoui; Vice-President Schwebel; Judges Oda, Guillaume, Ranjeva, Herczegh, Shi, Fleischhauer, Vereshchetin, Ferrari Bravo, Higgins;

AGAINST: Judges Shahabuddeen, Weeramantry, Koroma;

C. Unanimously,

A threat or use of force by means of nuclear weapons that is contrary to Article 2, paragraph 4, of the United Nations Charter and that fails to meet all the requirements of Article 51, is unlawful;

D. Unanimously,

A threat or use of nuclear weapons should also be compatible with the requirements of the international law applicable in armed conflict, particularly those of the principles and rules of international humanitarian law, as well as with specific obligations under treaties and other undertakings which expressly deal with nuclear weapons;

E. By seven votes to seven, by the President's casting vote,

It follows from the above-mentioned requirements that the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law;

However, in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake;

IN FAVOUR: President Bedjaoui; Judges Ranjeva, Herczegh, Shi, Fleischhauer, Vereshchetin, Ferrari Bravo;

AGAINST: Vice-President Schwebel ; Judges Oda, Guillaume, Shahabuddeen, Weeramantry, Koroma, Higgins;

F. Unanimously,

There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.

2. A comparative review of treaties governing nuclear weapons

	Prohibition			Scope	Definition	Monitoring		Permanency	
	Use	Stockpile	Production	Free Passage	Definition	Treaty body	IAEA Safeguards	Signatures	Ratifications
The Antarctic Treaty (1959)	Yes (Article V)			Yes (Article VI)	No	No	No	12	50
The Outer Space Treaty (1967)					No	No	No	89	101
The Sea Bed Treaty (1970)				Yes (Pream.)	No	Seabed Arms Control Treaty Review Conference (Article VIII)	No	84	94
The Treaty of Tlatelolco (1967)	Yes (Article 1A)	Yes (Article 1B)	Yes (Article 1A)		Yes (Article 5)	Agency for the Prohibition of Nuclear Energy in Latin America (Article 7)	Yes (Article 13)	33	33
The Treaty of Rarotonga (1985)		Yes (Article 3A)	Yes (Article 1A)	Yes (Article 2.2)	Yes (Article 1C)	Director of the South Pacific Bureau for Economic Cooperation and the Consultative Committee. (Article 9-10)	Yes (Annex 2)	13	13
The Treaty of Bangkok (1995)	Yes (Article 3.1.C)	Yes (Article 3.1.A)	Yes (Article 3.1.A)	Yes (Article 5.2)	Yes (Article 1C)	Commission for the Southeast Asia Nuclear Weapon-Free Zone (Article 8)	Yes (Article 5)	10	10
The Treaty of Pelindaba (1996)		Yes (Article 3, Article 4.1)	Yes (Article 3)	Yes (Article 2.2, Article 4.2)	Yes (Article 1C)	African Commission on Nuclear Energy (Article 12)	The IAEA can verify dismantling/destruction. (Article 6D)	52	31
The Treaty of Semipalatinsk (2006)		Yes (Article 3A)	Yes (Article 3A)	Yes (Article 4)	Yes (Article 1C)	No.	Yes (Article 8)	5	5

Annexes

					Negative Security Assurances			
Opened for signature	Entered into force	Delay (years)	Reservations	Withdrawal	P5 Protocol	P5 Ratified	Protocol prohibiting testing	P5 Ratification
1 December 1959	23 June 1961	2		Withdrawal is possible, effected two years after the receipt of notice. (Article XIIIC)	No	n/a.	No	n/a.
27 January 1967	10 October 1967	1		Withdrawal is possible, effected if giving notice twelve months in advance. (Article XVI)	No	n/a.	No	n/a.
11 February 1971	18 May 1972	1		Withdrawal is possible, effected if giving notice three months in advance. (Article VIII)	No	n/a.	No	n/a.
14 February 1967	25 April 1969	2	No (Article 27)	Denunciation is possible, takes effect after three months. (Article 30)	No	n/a.	No	n/a.
6 August 1985	11 December 1986	1	No (Article 14)	Withdrawal is possible, effected if giving notice twelve months in advance. (Article 13)	Yes (Protocol I / Protocol II)	2/4	Yes (Protocol I / Protocol III)	2/4
15 December 1995	27 March 1997	2	No (Article 17)	Withdrawal is possible, effected if giving twelve months notice. (Article 22.2-3)	Yes (Protocol to the Treaty on Southeast Asia Nuclear Weapon-Free Zone)	0	No	n/a.
11 April 1996	15 July 2009	13	No (Article 16)	Withdrawal is possible, effected if giving notice twelve months in advance. (Article 20)	Yes (Protocol I)	4	Yes (Protocol II)	4
8 September 2006	21 March 2009	3	No (Article 13)	Withdrawal is possible, effected if giving twelve months notice. (Article 16A-B)	Yes (Protocol to the Treaty on a Nuclear-Weapon-Free Zone in Central Asia)	0	No	n/a.

Notes

