

Why Are the Missiles (and Missile Defence) Called Peace-Keepers? – Corroding the Concept of Peaceful Use

Keith Wilson*

Keywords: missile defence; outer space; peaceful use.

Abstract. The United States is abrogating the Anti-Ballistic Missile Treaty in order to deploy a limited missile defence shield. Amongst other developments, this is prompting a reconsideration of the global security framework. However, a crucial element is missing from the current missile defence proposals: a clearly articulated concept of peaceful use, applicable both to outer space and to earth-space. The deployment of missile defence runs counter to emerging norms. It has effects going far beyond the abandonment or re-configuration of specific Cold War agreements. In a community of nations committed to the maintenance of international peace and security (*cf.* national or plurilateral security), sustainable meaning for widely used and accepted norms of peaceful use and peaceful purposes is at risk.

1. INTRODUCTION

Missiles and missile defences have again – post the ‘Star Wars’ era – received several years of almost constant attention. Kill vehicles. Decoys and dummy warheads. Spin and tumble. A multi-polar or uni-polar world.¹

* LL.B. (Hons.), B.A. (Adelaide); LL.M. (Leiden); Political Affairs Officer at the Secretariat of the Organisation for the Prohibition of Chemical Weapons (‘OPCW’), The Hague, The Netherlands.

The views expressed are those of the author in his personal capacity. This is a modified version of a paper entitled *Objects in the Politico-Legal Void between “Methods of Warfare” and “Peaceful Purposes”: The Use of Items on Earth and Places in Space*, submitted in 2000 in completion of a Masters in Public International Law at Leiden University. The current paper focuses to a greater extent on the effects of a limited national missile defence system on the status of outer space, as an area to be treated consistently with the current parameters of peaceful use under international law. I am very grateful to Lisa Tabassi at the OPCW Secretariat for her assistance. The new title is with thanks and apologies to Tracy Chapman.

1. On 14 January 2000, noting its concerns regarding a ‘uni-polar’ world dominated by the United States, the Russian Federation published a decree signed by then Acting President Vladimir Putin on 6 January, that modified its national security doctrine to reduce the threshold for using nuclear weapons “to repel armed aggression if all other means of resolving the crisis have been exhausted or proved ineffective.” Previously, under its 1997 security strategy, Russia reserved the right to use nuclear weapons only if its very existence was threatened. *Cf. see* US/Russian Joint Statement on Common Security Challenges at the Threshold of the Twenty-First Century, Moscow, 2 September 1998; *also* US/Russian Joint Statement on Principles of Strategic Stability, Moscow, June 2000.

Proposals for the United States of America, “at the height of its influence and prosperity,”² to develop a limited national missile defence (‘NMD’) against possible long-range missile attacks from a selection of much less influential and prosperous nations dubbed ‘rogue states’ or ‘states of concern’ became, at various times, an election issue of some importance in the 2000 US presidential race. Since coming into office, the new Bush administration has renewed efforts to promote a potentially extensive, and expensive, concept of layered missile defence.³ In December 2001, it announced its decision to withdraw from the Anti-Ballistic Missile (‘ABM’) Treaty of 1972.⁴

In October 1999, under its National Missile Defence Joint Programme, the US successfully fired the first of nineteen planned antimissile weapons tests, which were to be subject to Presidential review after the first three to be completed by mid-2000. In January 2000, amid allegations that the

-
2. *A National Security Strategy For a New Century*, The White House, December 1999, at iii, and, at 16–17:

We are committed to meeting the growing danger posed by nations developing and deploying long-range missiles that could deliver weapons of mass destruction against the United States. Informed by the Intelligence Community’s analysis of the August 1998 North Korean flight test of its Taepo Dong 1 missile, as well as the report of the Rumsfeld Commission and other information, the Administration has concluded that the threat posed by a rogue state developing an ICBM capable of striking the United States is growing. The Intelligence Community estimates that during the next fifteen years the United States will most likely face an ICBM threat from North Korea, probably from Iran, and possibly from Iraq.

Such a ‘deterrent system’ – involving the deployment of up to 100 antimissile missiles, in Alaska and potentially other locations including North Dakota – was to defend against attacks from terrorists or ‘rogue nations.’ It was a far cry from the much larger Strategic Defense Initiative, proposed by US President Ronald Reagan on 23 March 1983, to create an anti-nuclear shield to protect the US against thousands of incoming warheads from the Soviet Union. Under the Clinton administration, NMD was not intended to commence unless a number of conditions were met (threat materialization; operationally effective technology; affordability; overall strategic and arms control implications), but the right of ‘any state’ to veto its deployment decision was rejected.

3. See P. Wolfowitz, *Missile Defense: Unprepared for Manifest Peril*, comment by US Deputy Secretary for Defense, *International Herald Tribune*, 16 July 2001, adapted from testimony to the Senate Armed Services Committee on 12 July 2001:

The Bush administration intends to develop protection capable of defending against limited missile attacks from a rogue state or by accidental or unauthorized launch. We intend to develop layered defenses to intercept missiles of any range at every stage – boost, midcourse, and terminal. We have designed a programme to develop and deploy as soon as is appropriate.

See also the following: 1998 Report of the Commission to Assess the Ballistic Missile Threat to the United States (‘1998 Rumsfeld Report’); 1999 National Intelligence Estimate (Foreign Missile Developments and the Ballistic Missile Threat to the United States Through 2015); J. Cirincione, *Assessing the Assessment: The 1999 National Intelligence Estimate of the Ballistic Missile Threat*, 7(1) *The Non-Proliferation Review* 1 (Spring 2000); Report of the Commission to Assess United States National Security and Space Organization, January 2001 (‘2001 Rumsfeld Report’).

4. Treaty Between the USA and the USSR on the Limitation of Anti-Ballistic Missile Systems, 26 May 1972, entered into force 3 October 1972, TIAS 7503.

earlier ‘hit-to-kill’ missile test had not been the unqualified success first suggested, the next prototype interceptor was launched.⁵ It was not successful. A third test conducted in July 2000 missed its target due to booster failure.⁶ In August 2000, former President Clinton delayed a decision on NMD. The incoming Bush administration soon revived, and re-cast, the missile defence concept as a central tenet of foreign policy. The success of the fourth and fifth tests in July and December 2001 respectively, despite their limited parameters, resulted inevitably in the talking-up of an abbreviated deployment timetable, and the consequent early demise of the ABM Treaty.

Media coverage of the issue has focused almost exclusively on the political pros and cons in a political and security construct, as well as the technological feats and flaws. Scant attention has been paid to the potential impact on the international legal order, though there has been general awareness of the ‘treaty effects.’ However, it has been widely acknowledged that the development and deployment of limited missile defence would involve violation, or at least re-negotiation, of the ABM Treaty, as well as threats to the broader arms control agenda. The question was raised early on of whether NMD stood for ‘no more disarmament.’⁷

Progress in the prevention of an arms race in outer space remains tied to political and security considerations in more earthly disarmament and non-proliferation endeavours.⁸ Together with the issue of nuclear disarmament and the negotiation of a ban on fissile materials, the item ‘Prevention of an arms race in outer space’ has been among the thorniest of the priority items on the agenda of the United Nations Conference on Disarmament for several years.⁹ Political issues revolve around the insta-

5. *US “Kill Vehicle” put to the test*, *The Guardian*, 17 January 2000. The earlier pre-programmed interceptor did hit its target, despite problems with its navigational maps, but only after it had drifted off target and homed in on a decoy balloon that happened to be close enough to the target for the interceptor to notice it. The second test, rather than being pre-programmed, was to “receive in-flight targeting data from military satellites and radar” – *Clinton Adding to Missile Defense*, 11 January 2000, http://dailynews.yahoo.com/h/ap/20000111/pl/missile_defense3.

6. See W. Boese, *Crucial NMD Test Misses; Booster Failure Responsible*, 30(6) *Arms Control Today* 25 (July/August 2000).

7. G. Bunn, *Does NMD stand for “No More Disarmament” as well as “National Missile Defence”?*, 42 *Disarmament Diplomacy* 10 (December 1999).

8. See D. Myers, *The United Nations and the Peaceful Uses of Space*, in *IISL Proceedings 70* (1986); B. Cheng, *The 1967 Outer Space Treaty: Thirtieth Anniversary*, XXIII *Air and Space Law* 156, at 160 (1998), citing US Senator Gore before the UN First Committee, 3 December 1962: “The question of military activities in space cannot be divorced from the question of military activities on earth”; also B. Cheng, *Studies in International Space Law*, at 515 (1997).

9. See, for example, UN Under-Secretary-General Jayantha Dhanapala: *A Future Arms Control and Disarmament Agenda*, 1999 Olof Palme Memorial Lecture, 30 September 1999; R. Johnson, *Continuing Stalemate at the CD: Russia and China call for Work on Outer Space Weaponisation*, 11 June 1999, <http://www.acronym.org.uk/cddesc; CD/1586>, 7 September 1999, Report of the Conference on Disarmament to the General Assembly of the United Nations, at paragraph 9, noting that “consultations with a view to reaching consensus on

bility in the balance of power which, it is feared, would result from ‘full spectrum dominance,’ through the deployment of space-based military technologies with potentially global coverage.¹⁰ Despite the propensity for failure of many high-technology weapons systems, even compared to more rudimentary methods of warfare, states publicly express concerns also regarding laser or ‘high-density kinetic energy’ weapons.¹¹ At the national level, notably in the United States, any international treaty obligations that would result in ‘militarily significant’ limitations or effects are highly charged politically.¹² Moreover, although Russia and China have been the most outspoken critics of missile defence proposals, and other nuclear-weapons possessors have also shown clear discomfort at times, even the closest allies of the US have expressed concerns regarding the current US stance.

Legal questions arise associated with the permitted use of exotic areas such as outer space, whether categorised as ‘defensive,’ ‘non-aggressive,’ or purely ‘peaceful.’ For the future development of international law, is the term ‘peaceful purposes’ amenable to clear definition in international agreements, or should the word ‘peaceful’ be avoided altogether in future?¹³

Barriers – legal, political, and conceptual – to securing priority for work on an agreed definition, let alone achieving it in the current international environment, appear insurmountable. Avoiding a word in future treaties offers no solutions here either. Peace terminology is in widespread use, and needs to be given meaning, whenever and to the extent available, consistent with applicable principles of treaty interpretation. An alternative path of investigation and interpretation is to have regard to the range of related treaty terminology and state practice that has developed, particularly in recent times with the growth in verification-based regimes.

The unfortunate fact is that treaties dealing with outer space confront the intrepid inquirer with numerous definitional voids. They fail to address

the programme of work [...] were inconclusive”; and UN News, 16 August 2001, *Outgoing president of UN Disarmament Conference sees no early accord on work plan*, <http://www.un.org/News/dh/latest/page2.html>.

10. *E.g.*, see statement of Ambassador Munir Akram of Pakistan, 3 June 1999, in R. Johnson, 38 Disarmament Diplomacy, Statements at the CD, 6 June 2001, <http://www.acronym.org.uk/38cd>; see also CD/1645 Letter dated 5 June 2001 from the Permanent Representative of China addressed to the Secretary-General of the Conference on Disarmament transmitting a working paper entitled *Possible Elements of the Future International Legal Instrument on the Prevention of the Weaponization of Outer Space*.
11. Ambassador Akram, *id.*
12. See US Senate Executive Resolution 75 – Relative to the Chemical Weapons Convention, para. 24 *et seq.* (Senate – 17 April 1997); also its October 1999 rejection of the Comprehensive Test-Ban Treaty.
13. See *Introduction*, B. Jasani (Ed.), *Peaceful and Non-Peaceful Uses of Space: Problems of Definition for the Prevention of an Arms Race*, Chapter 1, at 8, 16 (UNIDIR, 1991); also I. Vlasic, *The Legal Aspects of Peaceful and Non-Peaceful Uses of Outer Space*, *id.*, Chapter 3, at 37; and S. Chandrashekar, *Problems of Definition: A View of an Emerging Space Power*, *id.*, Chapter 5, at 77.

the meaning of 'peaceful' at all, much less in a comprehensive manner. They also lack other key definitions – such as 'space weapon' and the concept of 'outer space' itself. However, in disarmament, non-proliferation and humanitarian fields, an increasing number of treaties and other international developments regulate the gamut of activities from waging war to waging peace. They include efforts relating to the non-diversion of dual-use technologies to prohibited (war and war-like) purposes, and to the diversion of such technologies and their benefits to peaceful uses. More recently, humanitarian principles have been exerting an influence on disarmament law, and common language is found in a range of instruments in these and related fields. When it comes to such fundamental concepts, there is much to recommend an approach based upon consistent earth/space standards.

This paper examines the legal terminology in use, the areas of convergence, and the global and normative developments under threat from the current missile defence proposals. At the same time, the practical impact of broader international relationships cannot be ignored; it provides a relevant backdrop to the legal framework. Not only security issues, but also the effects of the 'globalisation' phenomenon – in a commercial sense and in relation to other matters of international concern – may exert a wider influence.

2. CONSISTENCY AND CONVERGENCE IN LEGAL STANDARDS FOR EARTH AND SPACE

Traditionally, legal inquiries have sought out the meaning of 'peaceful purposes' in space and disarmament law, or the limits on 'methods and means of warfare' in humanitarian and disarmament law. The legal issue, which continues to be an important one, is whether the adoption of concepts in various treaties, and the different contexts in which they appear – in single page texts, or in detailed and increasingly intrusive regimes – has begun a process of greater precision. However, at times, the prospects of disengaging the political 'instability' debate from any coherent legal theory can seem remote indeed.¹⁴

In one respect, state practice is uniform, widespread, and long-standing. The maintenance of peace, in space as on earth, already carries with it the counterpoint of an appreciable degree of militarisation. Fundamental international legal and political statements – the Charter of the United Nations providing the prime examples – couple 'peace' inexorably with 'security.' Increasingly, however, a wedge is being driven between, on the one hand, notions of militarisation, encompassing security and even

14. See, for example, the conclusions of Myers, *supra* note 8, at 70; also H. Almond Jr., *Peaceful Purposes in Outer Space – Precision, Ambiguity or Confusion?*, in IISL Proceedings 1–5 (1988).

international cooperation and, on the other hand, 'weaponisation,' and its prevention or reduction through disarmament and arms control.

An interaction is also observable between treaties in the humanitarian and arms control fields,¹⁵ as well as with those having (globally) common scope regarding areas beyond the claims of national sovereignty. Although the technical features may vary, the essence of a peaceful use, or of a method of warfare, is not altered by variations in gravitational state. On this basis, the point of delimitation between earth and space, though relevant to permissibility of an activity, assumes secondary importance regarding its *characterisation* as serving a peaceful purpose or not.

Dual-use technologies, and the increasing convergence of military and civilian sources of production, further blur the boundaries between concepts and may, at first glance, confound attempts at characterisation. However, it also offers the prospect of a meaning of peaceful purposes that is more rational and content-driven than a negative definition based only on non-aggression, or even on non-military purposes. This applies as much to the various uses of satellites as it does to the peaceful and weapons-related applications of the chemicals in the ink for the pen used to write this paper¹⁶ (or to the computer which superseded it).

A range of lethal and non-lethal methods of warfare continue to be developed, which are capable of disabling or destroying not only people but also other living things, non-living objects and material, transport, and communications and computer-based systems.¹⁷ Some also have potential applications in outer space. However, the stationing of nuclear weapons and other weapons of mass destruction is prohibited in outer space. The use of chemical and biological methods of warfare is proscribed by treaty and under customary international law, applicable to both earth and space. Efforts continue to achieve the eventual elimination of nuclear weapons from earth-based warfare as well. A number of traditional and more recent

15. See R. Matthews & T. McCormack, *The Influence of Humanitarian Principles in the Negotiation of Arms Control Treaties*, 834 IRRC 331 (1999), indicating that the 1995 Protocol IV to the 1980 Certain Conventional (or Inhumane) Weapons Convention ('CCWC'), banning blinding lasers, was the result of a combination of humanitarian and proliferation concerns, and was unique in being negotiated before the weapons were actually used in battle. Moreover, the 1997 Ottawa Land Mines Convention was "the first occasion on which an arms-control agreement banning an entire category of weapons has been motivated primarily by humanitarian concerns."

16. *I.e.*, thiodiglycol, a component of some inks, can be used as a precursor to sulphur mustard chemical weapons – see Schedule 2.B(13), Annex on Chemicals, Chemical Weapons Convention, note 27 *infra*.

17. *E.g.*, see P. Evancoe, *Non-Lethal Technologies Enhance Warrior's Punch: Sound, Light, Chemicals Combine to Offer Range of Soft-kill Solutions*, National DEFENCE 26–29, December 1993; M. Meselson & J. Robinson, *Report of the 2nd Workshop of the Pugwash Study Group on the Implementation of the Chemical and Biological Weapons Conventions*, Pugwash Newsletter 4 (July 1994); *Nonlethal Technologies: Progress and Prospects*, Report of an Independent Task Force Sponsored by the Council on Foreign Relations (1999); T. Feakin, *Bradford Non-lethal Weapons Project*, Research Report 3 (August 2001), http://www.brad.ac.uk/acad/nlw/research_report_three.html.

methods of warfare are also subject to prohibitions, particularly where they cause superfluous injury or unnecessary suffering, or major damage to the environment, or fail to distinguish between combatant and civilian victims.

3. TERMINOLOGY IN USE – THE LIMITS ON METHODS OF WARFARE

Explicit statements in relation to the ‘means of injuring the enemy’ or the ‘methods and means of warfare’ are found throughout the ‘Hague’ and ‘Geneva’ laws, including in Article 22 of the 1907 Hague Regulations¹⁸ and Article 35 of Protocol I of 1977 (‘AP I’) additional to the 1949 Geneva Conventions applicable to international armed conflicts.¹⁹ The basic principle of international humanitarian law is that the right of the parties to an armed conflict to choose methods or means of warfare is not unlimited. Article 35 of AP I also prohibits the use of “weapons, projectiles or material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering” and “methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.”²⁰ In addition to the central Hague

18. Annex to Convention (IV) Respecting the Laws and Customs of War on Land, 18 October 1907, entered into force 26 January 1910, 3 Martens Nouveau Recueil, Series 3, 461, 187 Consol. TS 227. *See also* International Declaration concerning the Laws and Customs of War (‘Brussels Declaration’), 27 August 1874, Art. 12.

19. Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (‘AP I’), 8 June 1977, entered into force 7 December 1978, 1125 UNTS 287. As of 3 December 2001 it had 159 parties, but not the United States, India, Pakistan, Iran, Iraq, Israel or Japan. *See also* Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare (‘1925 Geneva Protocol’), 17 June 1925, entered into force 8 February 1928, TIAS 8061, 94 LNTS 65 (1929). As of 1 September 2001, it had 132 parties. Note that, although ‘means’ can refer primarily to weapons and ‘methods’ to military tactics, the term ‘*method of warfare*’ is generally used in this paper in a sense broad enough to encompass both aspects.

20. Arts. 35.2 and 35.3, respectively. Art. 35 of AP I also describes the position under customary international law in relation to any armed conflict. *Cf.* Common Art. 3 of the 1949 Geneva Conventions and Additional Protocol II of 1977 (‘AP II’), which deal specifically with non-international armed conflicts, say very little regarding methods of warfare in such conflicts: Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II), entered into force 7 December 1978, 1125 UNTS 3. As of 3 December 2001, it had 151 parties. Art. 1.1 provides:

This Protocol, which develops and supplements Article 3 common to the Geneva Conventions of 12 August 1949 without modifying its existing conditions of application, shall apply to all armed conflicts which are not covered by Article 1 of [AP I, on international armed conflicts] and which takes place in the territory of a High Contracting Party between its armed forces and dissident armed forces or other organized armed groups which, under responsible command, exercise such control over a part of its territory as to enable them to carry out sustained and concerted military operations and to implement this Protocol.

(1899/1907) and Geneva (1949/1977) instruments,²¹ principles, prohibitions, and limitations on methods of warfare also find expression in other multilateral treaties of the latter part of the twentieth century, including:

- the 1972 Biological and Toxin Weapons Convention ('BTWC');²²
- the 1976 Environmental Modification ('ENMOD') Convention;²³
- the 1980 Certain Conventional (or Inhumane) Weapons Convention ('CCWC'),²⁴ including the Amended Protocol II of 1996,²⁵ which places restrictions on the use of anti-personnel landmines, and Protocol IV of 1995,²⁶ banning blinding lasers;
- the 1993 Chemical Weapons Convention ('CWC');²⁷ and

Art. 13.2 of AP II (*see also* Art. 51 of AP I) provides:

The civilian population as such, as well as individual civilians, shall not be the object of attack. Acts or threats of violence the primary purpose of which is to spread terror among the civilian population are prohibited.

See also Declaration on the Rules of international humanitarian law governing the conduct of hostilities in non-international armed conflicts, San Remo, 7 April 1990, in which the Council of the International Institute of Humanitarian Law identified "principles and norms as crystallized or as emergent rules of international law" independently of the existence of treaty rules expressly adopted for such conflicts.

21. Specific early bans included those on the use of poisoned weapons, as well as prohibitions under the 1899 Hague Declaration (IV,3), 187 Consol. TS 459, on "the use of bullets which expand or flatten easily in the human body", and (IV,2) on asphyxiating gases, 187 Consol. TS 453. *Cf.* Brussels Declaration, *supra* note 18, Art. 13; and St. Petersburg Declaration of 1868, which forbade "the use of certain projectiles in times of war": Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 grammes Weight, 18 Martens Nouveau Recueil, Series 1, 474, 138 Consol. TS 297.
22. Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, 10 April 1972, reprinted *in* 11 ILM 3320 (1972). As of 14 March 2002, it had 144 states parties and an additional 18 signatories.
23. Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, 10 December 1976, UN General Assembly Res. 31/72 UN Doc. A/RES/31/72 (10 December 1976), TIAS 9614 – *see* first preambular paragraph, and Art. 1 regulating environmental modification as "the means of destruction, damage or injury," and banning such techniques having "widespread, long-lasting or severe effects." As of 14 March 2002, it had 66 parties.
24. Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to Have Indiscriminate Effects, Geneva, 10 October 1980, entered into force, with Protocols I (banning weapons leaving non-detectable fragments in the body), II and III (banning incendiary weapons directed against civilians), on 2 December 1983, 1342 UNTS 137, reprinted *in* 19 ILM 1523 (1980).
25. Protocol on Prohibitions or Restrictions on the Use of Mines, Booby Traps and Other Devices, as amended on 3 May 1996, entered into force 3 December 1998, reprinted *in* 35 ILM 1209 (1996). As of 14 March 2002, it had 63 parties.
26. Additional Protocol to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects, of 13 October 1995, entered into force, 30 July 1998, reprinted *in* 35 ILM 1218 (1996). As of 14 March 2002, it had 61 parties.
27. Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction ('CWC'), 13 January 1993, entered into force 29 April 1997, reprinted *in* 32 ILM 800 (1993). As of 14 March 2002, it had 145 states parties, and a further 29 signatories.

– the 1997 Land Mines Convention (‘Ottawa Convention’).²⁸

The CWC, a multilateral, non-discriminatory, and verifiable disarmament and non-proliferation treaty, contains broad-based bans on the use of chemical weapons and related activities. Article I.5 also prohibits states parties from using riot control agents “as a method of warfare.” In Preamble 7, it recognises “the prohibition, embodied in pertinent agreements and relevant principles of international law, of the use of herbicides as a method of warfare.”²⁹ It is a primarily earth-based (but space-applicable) regime, being implemented since 1997 through the work of the Organisation for the Prohibition of Chemical Weapons (‘OPCW’), headquartered in The Hague. Underlying its various features, the regime is built upon a duality. It aspires both to the total elimination of chemical weapons, and to the promotion of chemistry for peaceful purposes. But within this duality there are other distinctions. For example, as will be further considered, the CWC specifically permits the use of toxic chemicals and their precursors for certain peaceful and other “purposes not prohibited,” subject to various criteria.

4. MILITARY PURPOSES AND THE ‘INTERMEDIATE ZONE’

Anything that is not a ‘method of warfare’ or an act of aggression is not necessarily a ‘peaceful purpose.’ Many military activities take place during peace-time and constitute neither the (offensive or defensive) deployment of methods or means of warfare, nor are they activities which could, on any but the most abusive interpretation, be described as ‘peaceful’ in design, purpose or intent. Treaties also prohibit preliminary activities such as development and acquisition of certain weapons and associated agents in “any circumstances” (*e.g.*, CWC, Article I; BTWC, Article I), as well as transfer, retention, “military preparations,” or assistance, encouragement or inducement for their use (*e.g.*, CWC, Article I), and require consideration to be given, during the earliest stages prior to employment, to

28. See the final Preamble: Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, 18 September 1997, entered into force 1 March 1999, reprinted in 36 ILM 1507 (1997). As of 14 March 2002, it had 122 parties and a further 20 signatories.

29. The agreements and principles referred to there are generally understood to include the prohibitions contained in the 1925 Geneva Protocol, *supra* note 18. That Protocol confirmed in its preamble “the conscience and the practice of nations” banning the use of various chemical agents. It also declared the agreement of the parties to accept this prohibition where they are not yet parties to other relevant treaties and “to extend this prohibition to the use of bacteriological methods of warfare”; see also ENMOD Convention, *supra* note 23.

the consistency with international law of a new weapon, means or method of warfare, if it were to be employed.³⁰

Similarly, an activity that is not peaceful does not necessarily arise from military use, or from use as a method of warfare. The ENMOD Convention, for example, speaks of “military *or* any other hostile use.”³¹ The BTWC prohibits means of use of “agents or toxins for hostile purposes *or* in armed conflict.”³² This fluid situation is underscored by the reality of ‘dual use.’ For example, it has been stated that “though estimates vary, there are reportedly between four and five times the amount of plutonium in civilian nuclear programmes than in military inventories.”³³

On the other hand, a range of peaceful activities, including research developments, various types of training, and other forms of international co-operation – from space stations to civilian protection schemes, and sharing of scientific and technical information – occur only through the involvement of military personnel and equipment. These activities, despite, or perhaps because of, their stabilising and strategic value, do not serve essentially *military purposes*, at least not as precursors to use as methods of warfare. In the realm of outer space, reconnaissance satellites, if used for verification of arms control agreements, and not as components of weapons systems, have features consistent with peaceful uses.³⁴

5. THE (NON-)WEAPONISATION OF OUTER SPACE

There is no evidence that weapons are currently being stationed in outer space, though the technology clearly exists for space-based weapons systems.³⁵ This is significant practice in the context of the peaceful purposes debate. However, the postures of certain militarily space-capable nations, including those within regional organisations, remain ‘open’ on the future direction of the deployment of space technology, the delivery

30. Art. 36 of AP I:

In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to a High Contracting Party.

31. *Supra* note 23. *See* Arts. I and VIII.1 and Understanding Relating to Article II (emphasis added).

32. *Supra* note 22, Art. 1(2) (emphasis added).

33. Dhanapala, *supra* note 9, at 6. Might a failure to secure adequate controls over certain activities or stockpiles, *e.g.*, regarding access, accountability or environmental issues, at some point change their ‘peaceful’ status or ‘rating’ – if not to military, then to hostile or to some other ‘non-peaceful’ characterisation?

34. *See* B. Jasani, *Introduction*, in Jasani, *supra* note 13, at 8, 14–16.

35. *See* M. Krepon, *Lost in Space – The Misguided Drive towards Antisatellite Weapons*, *Foreign Affairs* 2, at 3 (May/June 2001), also referring to the limited number of anti-satellite tests carried out by the USA from 1964 to 1975 and by the former Soviet Union from 1968 to 1971, and 1976 to 1982.

of space-reliant weapons and the nuclear issue generally, including regarding first use. There is no doubt that the aim of preserving outer space as an area free of ‘weaponisation’ remains unfulfilled.³⁶ The ‘matrix’³⁷ under multilateral treaties addressing the issue is incomplete, particularly in relation to nuclear, conventional, and ‘exotic’ weapons systems.³⁸ The main multilateral instruments remain the following:

- the framework for peaceful use provided by the 1967 Outer Space Treaty – *i.e.*, no stationing of nuclear weapons or other weapons of mass destruction in outer space, or placement in earth orbit or installation on celestial bodies, and no weapons-testing or military installations or manoeuvres on celestial bodies;³⁹
- the CWC of 1993, imposing wide-ranging bans on chemical weapons anywhere under the jurisdiction or control of a state party, and verifiable;
- the BTWC of 1972 – similarly for biological weapons, but not yet verifiable;
- the 1963 Partial Test Ban Treaty (‘PTBT’) – no nuclear explosions, including nuclear weapons tests, in outer space;⁴⁰
- the 1996 Comprehensive Nuclear-Test-Ban Treaty (‘CTBT’), as a

36. F. Cleminson, *Banning the Stationing of Weapons in Space Through Arms Control: A Major Step in the Promotion of Strategic Stability in the 21st Century*, in J.M. Beier & S. Mataja (Eds.), *Arms Control and the Rule of Law: A Framework for Peace and Security in Outer Space*, Proceedings of the Fifteenth Annual Ottawa Non-proliferation, Arms Control and Disarmament Verification (‘NACD’) Symposium (1998).

37. *I.e.*, prohibitions on: space-based weapon to space-based target; space-based weapon to earth-based target; earth-based weapon to space-based target; and, finally, earth-to-earth weapons “passing through” outer space.

38. See matrices reproduced in P. Baines, *A Variant of a Mandate for an Ad Hoc Committee on Outer Space within the Conference on Disarmament: A Convention for the Non-Weaponization of Outer Space*, in Beier & Mataja, *supra* note 36, at 78, and P. Baines, *The Ballistic Missile Defence and Anti-Satellite Relationship*, *id.*, at 127; and, in a simpler format, F. Osborne, *Outer Space and Multilateral Security: Current Trends and Possibilities*, *id.*, at 8.

39. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, opened for signature 27 January 1967, entry into force 10 October 1967, 610 UNTS 205. As of 1 September 2001, it had 96 parties, including adoption by all space-faring nations. Its provisions have customary international law status. Other weapons of mass destruction clearly include chemical and biological weapons, as well as radiological and “any future weapons possessing large-scale destructive potential” – see Vlasic, *supra* note 13, at 42. Significantly, Art. IV does not expressly prohibit: the ‘passage’ of weapons of mass destruction through outer space; the placement of other types of weapons in Earth orbit (*e.g.*, ‘defensive’ space objects or anti-satellite systems, or even conventional weapons or any weapon not capable of causing mass destruction); or the ‘stationing’ of such other weapons elsewhere in outer space (though the prohibition on military manoeuvres, installations, etc., and any type of weapons testing, applies to the moon and other celestial bodies, not including the Earth).

40. Treaty Banning Nuclear Weapons in the Atmosphere, in Outer Space and Under Water, 5 August 1963, entry into force 10 October 1963, 480 UNTS 43. As of 1 January 2001, it had 131 parties.

step towards complete nuclear disarmament – not yet in force;⁴¹ and, ultimately

- the principles set out in the UN Charter and in specific General Assembly resolutions of a normative character, such as the 1963 Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space⁴² and the 1974 Definition of Aggression.⁴³

To this list may be added:

- other subject-specific disarmament and non-proliferation treaties (*e.g.*, ENMOD);⁴⁴
- the increasing trend towards international cooperation for peaceful purposes, both in outer space (*e.g.*, the International Space Station)⁴⁵ and in verification regimes in previously weaponised environments on earth (*e.g.*, CWC, Article XI);
- the ‘methods of warfare’ normative prohibitions from international humanitarian law (*e.g.*, Hague Regulations, Geneva Conventions and Additional Protocols, CCWC, Ottawa Land Mines Convention); and
- general normative effects of other treaties dealing with areas beyond national sovereignty (*e.g.*, Antarctic Treaty, Seabed Treaty, Law of the Sea Convention) and the use of certain areas (‘exclusively’) for peaceful purposes.

Arguably, the 1972 ABM Treaty⁴⁶ has remained to date the major bulkhead against weaponisation of outer space, through its constraints on the devel-

41. 24 September 1996, UN Doc. A/50/1027/Annex (1996), adopted by UN General Assembly Res. 50/245, not yet in force, reprinted in 35 ILM 1439 (1996). As of 14 March 2002, it had 165 signatories, including 90 ratifications but still lacking many of the 44 nuclear-capable states required to bring it into force, including China and the USA. The rejection of the CTBT by the US Senate in October 1999 raises serious concerns that it will ever enter into force.

42. UN General Assembly Res. 1962 (XVIII), UN Doc. A/RES/1962(XVIII) (13 December 1963), adopted unanimously.

43. UN General Assembly Res. 3314 (XXIV), UN Doc. A/RES/3314(XXIV) (14 December 1974), Arts. 3 and 4; *see* Vlasic, *supra* note 13, at 48.

44. *Supra* note 23, applying, under Art. II, to “any technique for changing – through the deliberate manipulation of natural processes – the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space.”

45. Beginning with the signing of the Space Station Agreement on 29 September 1988, full text in United States Space Law – National and International Regulation, Release 89-1, at 3:

Agreement Among the Government of the United States of America, Governments of Member States of the European Space Agency, the Government of Japan, and the Government of Canada on Cooperation in the Detailed Design, Development, Operation and Utilization of the Permanently Manned Civil Space Station

which specifically states, in Art. 1, that it is “for peaceful purposes, in accordance with international law”; *see also* Vlasic, *supra* note 13, at 43.

46. *See* ABM Treaty, *supra* note 4; and 1974 Protocol, entered into force 24 May 1976, limiting each party to a single area for the deployment of ABM systems.

opment and deployment of NMD-type anti-ballistic missile systems. The ABM Treaty, like the Strategic Arms Limitation Talks ('SALT')/START process and comparable bilateral agreements,⁴⁷ has been seen as having application, together with the multilateral space treaties, as part of 'customary space law,' and thus having a wider, and continuing, normative effect, including on states not party to it.⁴⁸

However, subject to general international law, including the UN Charter, the parties to the various treaties mentioned above are still entitled to use what Prof. Bin Cheng has called the "outer void space"⁴⁹ for a range of military purposes, except the stationing of nuclear weapons or other weapons of mass destruction in such areas. In urging the adoption of a clear definition of the term 'peaceful' in outer space law, Prof. Cheng has condemned the "deliberate distortion" of that term at the political level – that has equated peaceful with 'non-aggressive' rather than 'non-military.' This distortion represents a misreading of Article IV of the Outer Space Treaty in particular, and deprives the term 'peaceful' and the concomitant expression 'exclusively for peaceful purposes' of any meaning at all.⁵⁰

An interpretation of 'peaceful' equated with 'non-aggressive,' rather than 'non-military,'⁵¹ emerged and found support in state practice which, in the 1980s, saw the vast majority of all satellites having military, mainly reconnaissance, purposes.⁵² This situation was changing rapidly by the turn of the century with the growth in the commercial launch and satellite industries, primarily for space transportation and telecommunications, but also

47. *E.g.*, the 1987 Intermediate-Range Nuclear Forces Treaty ('INF').

48. Cleminson, *supra* note 36, at 36. The final document of the 2000 NPT review Conference provided for "preserving and strengthening the ABM Treaty as a cornerstone of strategic stability" – 30(5) Arms Control Today 28 (June 2000); *see also*, in relation to the ABM Treaty and third states, R. Müllerson, *The ABM Treaty: Changed Circumstances, Extraordinary Events, Supreme Interests and International Law*, 50 ICLQ 509, at 535–539 (July 2001).

49. *See* Cheng, *Studies in International Space Law*, *supra* note 8, at 327 – "outer void space" means those parts of outer space not including the moon and other celestial bodies.

50. Cheng, *The 1967 Outer Space Treaty*, *supra* note 8, at 158–159.

51. Vlasic, *supra* note 13, at 40–45, cites the change in the rhetoric of the United States as dating from as early as 1958–1959; concludes that the Soviet Union, despite its formal position, "impliedly acquiesced in the U.S. interpretation," including that both were "irrevocably committed to using outer space for a variety of military purposes"; and observes that no state has either formally protested the US interpretation, or requested consultations provided for by Art. IX of the Outer Space Treaty, though "conceivably it could be employed in restraint of certain potentially harmful military activities."

52. *I.e.*, more than 75%, *see* Vlasic, *id.*, at 68; *also* C.-G. Hasselmann, *Weapons of Mass Destruction, Article IV Outer Space Treaty and the Relationship to General Disarmament*, Proceedings of the Twenty-Fifth Colloquium on the Law of Outer Space, at 99 (1982). *See also* the Interim Agreement on Certain Measures with respect to Strategic Offensive Arms, TIAS 7504 (1972), no longer in force, which, as between the United States and the Soviet Union, legitimised the use of reconnaissance satellites.

for research purposes and remote sensing for non-military applications.⁵³ Such developments alone may not have defined the term ‘peaceful’ with greater precision or changed its core content. However, when viewed together with other trends in the arms race, including disarmament treaties as well as ‘soft law,’⁵⁴ they may be refining new concepts that have shifted the boundaries.

6. PEACEFUL USES, MEANS, AND PURPOSES

An authoritative definition of peaceful use would be a very useful and healthy development,⁵⁵ compared to the current situation. In many areas of international law, it has proven desirable, and necessary, to describe activities in terms of peace, or of their peaceful purposes, uses or applications. The first of the Purposes of the United Nations, as stated in Article 1 of the UN Charter, is centred around fundamental concepts including peaceful means and peace and security maintenance.⁵⁶ One of the earliest

53. *E.g.*, agricultural management, weather forecasting, and disaster relief. Space commercialisation expenditure is estimated to exceed US\$500 billion in the next few years – see Cleminson, *supra* note 36, at 38. Krepon, *supra* note 35, at 6, referring to US Space Command estimates that by 2010, some 2000 operating satellites will orbit the earth, compared to roughly 600 today, notes that “[m]uch of this growth will be tied to civilian and commercial applications, especially those in communication-related sectors.”

54. Since 1981, the General Assembly has adopted annual resolutions on the prevention of an arms race in outer space. *E.g.*, UN Doc. 36/97 C (9 December 1981); UN Doc. 46/33 (6 December 1991); and, more recently, see UN General Assembly Res. 54/53, UN Doc. A/RES/54/53 (L.22) (1 December 1999), 160 states voted for, none against, with two abstentions (USA and Israel); and in 2000, UN General Assembly Res. 55/32, UN Doc. A/55/32 (20 November 2000) (meeting record – UN Doc. A/55/PV.69; press release – GA/9832; vote – 163-0-3 (USA, Israel, Micronesia) confirming a recent shift by most of NATO to vote in favour rather than abstaining. *Cf.* in 1982, the resolution concerned the “prohibition of an arms race in outer space and prohibition of anti-satellite systems,” see UN Doc. 37/99 D (13 December 1982). Note that, in 2000, an UN General Assembly resolution on missiles, first introduced in the First Committee on Disarmament in 1999, requested the Secretary-General, assisted by a panel of governmental experts, to prepare a report on the issue of missiles in all its aspects, for consideration at the fifty-seventh session of the UN General Assembly, in 2002 – UN General Assembly Res. 55/33A, UN Doc. 55/33A/L/1/Rev.1 (20 November 2000). The vote was 97-0-65, with NATO, EU, and Missile Technology Control Regime (‘MTCR’) countries, except Russia and South Africa, abstaining – see J. Rissanen & R. Johnson, *Low-key First Committee Seeks to Maximise Common Ground*, 52 *Disarmament Diplomacy* 7 (November 2000).

55. Cheng, *The 1967 Outer Space Treaty*, *supra* note 8, at 158.

56. Charter of the United Nations, San Francisco, 26 June 1945, entry into force 24 October 1945, Trb. 1979 No. 37, Stb. 1945 F 321, Art. 1, para. 1:

To maintain international peace and security, and to that end: to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace, and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace.

examples of the use of the term ‘peaceful purposes’ in a treaty – and its explicit separation from military purposes – is to be found in the 1956 Statute of the International Atomic Energy Agency (‘IAEA’).⁵⁷ The distinction between the furthering of peaceful (permitted) and military purposes (prohibited, “so far as [the IAEA] is able”) is made in Articles II, III, XI, and XII.⁵⁸ Sub-paragraph A.5 of Article III impliedly extends the term ‘peaceful’ to the application of safeguards to activities of states in the atomic energy field.⁵⁹

When the attention of the United Nations eventually turned to the space-based or space-applied activities of states, the UN General Assembly declared that outer space was to be used “exclusively for peaceful purposes.”⁶⁰ This development sprang from the fear of a shift in the political balance of power if outer space was to be used as a military base by

Underpinning these purposes is the cardinal international norm in Art. 2(4) of the UN Charter prohibiting the use of force, or the threat of force, in inter-state relations. In addition, Art. 2(3) of the Charter requires ‘peaceful means’ in the settlement of international disputes involving member states, though this is qualified by the requirement for this to be done ‘in such a manner that international peace and security, and justice, are not endangered’; *also, e.g.*, UNCLOS, Arts. 279, 280, *infra* note 87. In Chapter VI of the UN Charter, Art. 33 provides examples of means for the ‘pacific settlement of disputes,’ including negotiation, enquiry, mediation, conciliation, judicial settlement, and regional mechanisms. Other ‘creative’ forms of peace (and security) maintenance are also undertaken pursuant to the UN Charter, not limited to Security Council-sanctioned enforcement action under Chapter VII.

57. Approved 23 October 1956 by the Conference on the IAEA Statute, entered into force 29 July 1957. Sub-para. A.2 of Art. III of the Statute authorizes the IAEA to

meet the needs of research on, and development and practical application of, atomic energy for peaceful purposes, including the production of electric power, with due consideration for the underdeveloped areas of the world.

Sub-para. A.1 provides for performance of “any operation or service useful in research on, or development or practical application of, atomic energy for peaceful purposes.” Subsequent Articles describe activities in the pursuit of peaceful uses, such as exchange of scientific and technical information and training of scientists and experts – Art. III, sub-para. A.3 and A.4. “Special fissionable materials” received by the IAEA are to be used for peaceful purposes only, and the Agency must establish proper controls to that end – *see* Art. III, sub-para. B.2 – and definition in Art. XX, para. 1, to mean “plutonium-239; uranium-233; uranium enriched in the isotopes 235 or 233; any material containing one or more of the foregoing; and such other fissionable material as the Board of Governors shall from time to time determine [...]” but not including “source material,” which is defined separately in Art. XX, para. 3.

58. *See, e.g.*, sub-para. F.4 of Art. XI, and paras. A and B of Art. XII. Sub-para. A.4 of Art. XII specifically refers to preventing the “diversion of materials for military purposes.”

59. *I.e.*, where they are subject to a bilateral or multilateral arrangement with the IAEA, or at the request of a state.

60. UN General Assembly Res. 1148 (XII), UN Doc. A/RES/1148(XII) (14 November 1957); affirmed in UN General Assembly Res. 1348 (XIII), UN Doc. A/RES/1348(XIII) (13 December 1958); and addressed regularly thereafter until the adoption of the 1967 Outer Space Treaty, *e.g.*, in the unanimous UN General Assembly Res. 1721 (XVI), UN Doc. A/RES/1721(XVI) (20 December 1961), and Res. 1802 (XVII), UN Doc. A/RES/1802(XVII) (14 December 1962).

the space powers.⁶¹ The original proposal came from the United States, calling for the establishment of an international inspection system to verify that “future developments in outer space would be devoted exclusively to peaceful and scientific purposes.”⁶² Subsequently, Article IV of the 1967 Outer Space Treaty⁶³ and Article III of the 1979 Moon Treaty⁶⁴ obliged states to use the moon and other celestial bodies “exclusively for peaceful purposes.” The common interest of states and all mankind in the peaceful exploration and use of outer space has also been stated in numerous resolutions of the UN General Assembly and in all five major outer space treaties.⁶⁵ The 1963 Declaration of Legal Principles, in addition to a number of other important principles in relation to state responsibility, liability, and jurisdiction, affirmed the exploration and use of outer space for peaceful purposes twice in the preambles and twice in the sixth principle. The word ‘peace’ or ‘peaceful’ is used seven times in total, and the concept of the use of space for the ‘betterment’ or ‘benefit’ or in the ‘interests’ of states and all mankind is mentioned in its various forms on five occasions. The second and fourth principles make the link to international law, the latter expressly mentioning the UN Charter and the maintenance

61. See H. Wassenbergh, *Outer Space, A Military Playground*, (1992), in P. Haanappel & T. Kok (Eds.), *International Institute of Air and Space Law*, Part I, 164 (Leiden University, 1997).

62. See UN Doc. A/C.1/783 (14 January 1957); Vlastic, *supra* note 13, at 38–39; Myers, *supra* note 8, at 67.

63. *Supra* note 39. Peaceful purposes are mentioned twice in the Preamble. Arts. IV, IX, and XI contain important provisions regarding the exclusive use of the moon and other celestial bodies for peaceful purposes, as well as non-interference with, and international co-operation in, the peaceful exploration and use of outer space. The second paragraph of Art. IV bans the establishment of military bases or installations, etc., weapons-testing or military manoeuvres on celestial bodies, other than the use of military personnel “for scientific research or for any other peaceful purposes.”

64. Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, opened for signature 18 December 1979, entry into force 11 July 1984, 1363 UNTS 3, reprinted in 18 ILM 1434 (1979). Only 10 states are parties and an additional 5 are signatories. Non-weaponisation of outer space is not its shortcoming. The main objection of space powers who were in a position to take part in moon exploration – and potentially to invest significant resources in its exploitation – remains with the implications flowing from the concept in Art. 4 of the moon as the “province of all mankind,” and the requirement in Art. 11.5 for the establishment of an international regime to “govern the exploitation of the natural resources of the Moon as such exploitation is about to become feasible.”

65. 1967 Outer Space Treaty, *supra* note 39; Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (‘1968 Rescue and Return Agreement’), 22 April 1968, entered into force 3 December 1968, 672 UNTS 119; Convention on International Liability for Damage Caused by Space Objects (‘1972 Liability Convention’), 29 March 1972, entered into force 1 September 1972, 961 UNTS 187; Convention on Registration of Objects Launched into Outer Space (‘1975 Registration Convention’), 14 January 1975, entered into force 15 September 1976, 1023 UNTS 15; and 1979 Moon Treaty, *supra* note 64.

of international peace and security.⁶⁶ In the same year, the PTBT was adopted.⁶⁷

The name and mandate of the United Nations Committee on the Peaceful Uses of Outer Space ('UNCOPUOS') also indicate the central place of the term 'peaceful.'⁶⁸ International cooperation in space technology applications has been the main focus of its work since 1968 – "for economic and social development, including applications for meteorology, communications and broadcasting, resource management and development, environmental monitoring, navigation and disaster relief." These are all prime examples giving substantive content to the notion of 'peaceful purposes.'⁶⁹

Other instruments in the disarmament and non-proliferation field which contain the concept of 'peaceful purposes' include:

- The 1968 Treaty on the Non-Proliferation of Nuclear Weapons ('NPT') – the most universally adopted disarmament treaty, widely regarded as a cornerstone non-proliferation instrument, and intended to prevent the proliferation of nuclear weapons and related technology.⁷⁰ It affirms the role of the IAEA safeguards regime, and refers to peaceful purposes, peaceful nuclear uses, activities, and applications no fewer than twelve times in its brief text.⁷¹
- The 1972 BTWC which, in relation to permissible biological activ-

66. Earlier in 1963, the UN General Assembly had unanimously adopted a resolution dealing with outer space. It called upon states to refrain from placing in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction or from installing such weapons on celestial bodies. UN General Assembly Res. 1884 (XVIII), UN Doc. A/RES/1884(XVIII) (17 October 1963).

67. *Supra* note 40.

68. After being first established as an *ad hoc* Committee in 1958, UNCOPUOS became a permanent body in 1959; UN General Assembly Res. 1472 (XIV), UN Doc. A/RES/1472(XIV) (12 December 1959); reaffirming the mandate of the *ad hoc* Committee in UN General Assembly Res. 1348 (XIII), UN Doc. A/RES/1348(XIII) (13 December 1958). *See also* UN General Assembly Res. 1721 (XVI), UN Doc. A/RES/1721(XVI) (20 December 1961), broadly encompassing international science and technology co-operation, including information exchanges, and related organisational arrangements in the peaceful uses of outer space. It has two standing sub-committees of the whole, dealing with scientific and technical issues, and with legal issues. The Legal Subcommittee produced the texts of the five international space treaties.

69. *See Space Activities of the United Nations and International Organizations* (UN: New York, 1992), for details of the wide range of international co-operation activities.

70. 1 July 1968, entry into force 5 March 1970, 729 UNTS 169. As of 1 September 2001, it had 187 parties – all UN member states and permanent observer states except Cuba, Israel, India, and Pakistan. But it is a discriminatory regime based on different obligations for the five nuclear-testing states who were members of the 'club' in 1968 – who counted on no increase in its numbers – and for other states. The 1998 tests conducted by India and Pakistan – non-NPT states – shook the club to its foundations.

71. The NPT links the maintenance of international peace and security to the "least diversion for armaments of the world's human and economic resources" and by "preventing diversion of nuclear energy [...] to nuclear weapons or other nuclear explosive devices" – *see* final Preamble, and Art. 3 NPT.

ities, refers to “prophylactic, protective *or other* peaceful purposes.”⁷² Article X also indicates that certain technical exchanges of equipment, materials or information, scientific development and applications may *serve* peaceful purposes, and that the “prevention of disease” *is* a peaceful purpose.⁷³

- The 1976 ENMOD Convention, which also mentions ‘peaceful purposes’ in its fifth Preamble and Article III.⁷⁴ It anticipates the “exchange of scientific and technological information” and “international economic and scientific co-operation” for such purposes.⁷⁵
- The 1993 CWC – Article II.9(a) elaborates further on peaceful applications in the field of chemistry, including industrial, agricultural, research, medical and pharmaceutical purposes. Article XI.2 also indicates that these purposes may be served by “the development and promotion of scientific and technological knowledge in the field of chemistry.”⁷⁶ However, unlike the BTWC, under Article II.9 of the CWC certain ‘protective’ and ‘military’ purposes and ‘law enforcement’ are treated as separate categories of non-prohibited purposes, as distinct from the peaceful purposes listed in sub-paragraph (a);⁷⁷ and
- The 1996 CTBT, not yet in force,⁷⁸ which includes the expression ‘peaceful purposes’ in sub-paragraphs A.12 and A.13 of Article IV, dealing with verification mechanisms.⁷⁹ The intention is that the exchange of verification technologies should occur for peaceful purposes only. The implication is that verification activities themselves (when conducted in accordance with convention methodologies) may serve peaceful purposes.

This raises an interesting issue of whether the act of disarmament itself constitutes a ‘peaceful purpose.’ The alternative is to regard a peaceful purpose as involving an independent outcome beyond the simple surrender of arms, *i.e.*, for example, a conversion to other uses achieved through a

72. *Supra* note 22, Art. I(1) (emphasis added). *See also* Art. II (diversion to peaceful purposes).

73. *Id.*, Art. X(1) (emphasis added).

74. *Supra* note 23.

75. However, the term is used “without prejudice to the generally recognized principles and applicable rules of international law”; *id.*, Art. III(1). It is also specifically understood, in accordance with the curious and somewhat circular Understanding Relating to Article III, that the Convention “does not deal with the question whether or not a given use of environmental modification techniques for peaceful purposes is in accordance with” such principles and rules, *i.e.*, may an ‘ENMOD use’ therefore be ‘peaceful’ but still in conflict with international law?

76. *Supra* note 27.

77. These concepts, including use of riot control agents as a subset of (domestic) law enforcement, are discussed further in *infra* notes 122 and 134 and accompanying text.

78. *Supra* note 41.

79. Unlike the PTBT, *supra* note 40, which does not mention peaceful purposes and, lacking any such verification mechanism, simply aspired to “an agreement on permanent and complete disarmament under strict international control” – *see* Preamble and Art. I(b).

shift in production.⁸⁰ Again, the answer may lie somewhere between these two positions, but borrowing a little from both. That is, sometimes a peaceful purpose can be the use itself, and sometimes a process associated with, or immediately preceding, a peaceful use. An example of a peaceful purpose, in the context both of the prevention of an arms race in outer space and of terrestrial non-proliferation, may be the use of reconnaissance satellites for treaty verification. It would not include anti-satellite weapons ('ASAT') systems.

Part III of the Protocol to the CTBT, dealing with confidence-building measures, also indicates that certain nuclear explosions, including calibration explosions and those for 'other purposes' relating to calibrating the International Monitoring System are at least not inconsistent with peaceful purposes.⁸¹ However, paragraph 1 of Part III includes a types (TNT-equivalent) and quantities (300 tonnes or greater) approach. The premise is that such activities over certain threshold levels raise legitimate concerns that they may not be applied to peaceful purposes. They require notification, "on a voluntary basis" and in advance if possible, of their location, type, quantity, "configuration" and intended purpose. Criteria based on 'types and quantities' are also an important feature of the CWC.⁸²

A number of regional treaties for nuclear-weapon-free zones have also been adopted, in the South Pacific, in Latin America and the Caribbean,⁸³

80. Referred to elsewhere as a 'peace dividend,' and especially, in its most positive sense, in the form of an equitable redistribution of wealth, through the link between disarmament and development – declaration of the 1987 International Conference on the relationship between Disarmament and Development. *See, e.g.*, K. Hartley (Ed.), *Economic Aspects of Disarmament: Disarmament as an Investment Process*, UNIDIR/92/94 (1993); S. Deger & S. Sen, *Military Expenditure. The Political Economy of International Security*, (1990) SIPRI 26. *See also* the UN General Assembly Resolution on the Relationship between Disarmament and Development, introduced in 2000 by South Africa on behalf of the non-aligned states, UN General Assembly Res. 55/33L, UN Doc. A/RES/55/33L (L.2) (20 November 2000) (meeting record – A/55/PV.69; press release – GA/9829), consensus resolution, stressing the importance of this 'symbiotic relationship' – however, the link is not accepted by the US, nor the savings link by the EU.

81. *Supra* note 41. However, *see* the various regional nuclear free zone treaties, which describe, for example, "measures to provide assurance of exclusively peaceful non-explosive use" – Art. 4(b) of the South Pacific Nuclear Free Zone Treaty ('Treaty of Rarotonga'), 6 August 1985, entered into force 11 December 1986. As of 1 September 2001 it had 13 parties, and another four parties to at least two of its three Protocols. *See also* the 1976 Peaceful Nuclear Explosions ('PNE') Treaty Between the USA and the USSR on Underground Nuclear Explosions for Peaceful Purposes, signed 28 May 1976, entered into force 11 December 1990. It limited any nuclear explosions carried out by the parties outside the US and ex-Soviet weapons test sites to 150 kilotons.

82. *See infra* note 135 *et seq.*

83. Treaty of Rarotonga, *supra* note 81. *Also* Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean ('Treaty of Tlatelolco'), Mexico City, 14 February 1967; as of 1 September 2001, it had 32 parties, and another six parties to at least one of its two Protocols. Its provisions are more detailed on permissible "explosions of nuclear devices for peaceful purposes" (Art. 18) – although a different interpretation has evolved as the nuclear-weapons-free-zone concept has developed – and the use of "nuclear energy for peaceful purposes, in particular for their economic development and social progress" (Art. 17). The definition of nuclear weapons in Art. 5 also includes a requirement for

and more recently in Southeast Asia.⁸⁴ The African Nuclear-Weapon-Free-Zone Treaty ('Pelindaba Treaty') is not yet in force.⁸⁵ Again, a linkage is made between verification, safeguards and peaceful purposes, particularly in relation to "peaceful nuclear explosions."

Conventions other than the outer space treaties, also dealing with areas beyond national jurisdiction and claims to sovereignty, affirm the peaceful purposes concept. Such areas, described as part of the 'global commons' or the 'common heritage/interest of mankind,' include the high seas, the deep sea bed and parts of Antarctica.⁸⁶ For example, Article 88 of UNCLOS states that: "The high seas shall be reserved for peaceful purposes."⁸⁷ Part

such a device to have "a group of characteristics that are appropriate for use for warlike purposes" and "an instrument that may be used for the transport or propulsion of the device is not included in this definition if it is separable from the device and not an indivisible part thereof."

84. Treaty on the Southeast Asia Nuclear Weapon-Free Zone (Bangkok Treaty), 15 December 1995, entry into force 27 March 1997; as of 1 September 2001, it had 9 parties. Art. 4 provides for parties to use nuclear material and facilities "exclusively for peaceful purposes," and to subject peaceful nuclear energy programmes to "rigorous nuclear safety assessment" in conformity with Art. III.6, IAEA Statute. *See also* proposals for the establishment of nuclear-weapons-free zones in the Middle East, UN General Assembly Res. 55/30, UN Doc. A/RES/55/30 (L.16) (20 November 2000) (meeting record – A/55/PV.69; press release – GA/9829); and in Central Asia, UN General Assembly Res. 55/33W, UN Doc. A/RES/55/33W (L.45/Rev.1*) (20 November 2000) (meeting record – A/55/PV.69; press release – GA/9829), consensus resolutions.
85. As of 1 August 2000, it had 13 parties, but requires 28 ratifications to enter into force. *See* Art. 1(c) definition of "Nuclear explosive device," Art. 8 in relation to peaceful nuclear activities ("the use of nuclear science and technology for peaceful purposes"), and Art. 9 on verification of peaceful uses in accordance with comprehensive safeguards agreements to be concluded by each party with the IAEA for that purpose.
86. As is the airspace above the high seas. The Outer Space Treaty, *supra* note 39, second preamble, refers to 'common interest.' Similarly, treaties dealing with the atmosphere, climate, and natural and cultural heritage, though not referring to peaceful purposes, speak variously of the 'common concern of humankind' or the 'world heritage of mankind as a whole'; *see* UN Framework Convention on Climate Change, New York, 9 May 1992, first preambular paragraph; Convention on Biological Diversity, Rio de Janeiro, 5 June 1992, Preamble; UNESCO Convention for the Protection of the World Cultural and Natural Heritage, Paris, 16 November 1972, Preamble; and *see Developments in International Law – International Environmental Law*, 24 Harv. L. Rev. 1484, 1536 (1991).
87. It may be implied that the 'freedoms' enumerated in Article 87 include subject matter that is capable of being applied to peaceful purposes in the exercise of those freedoms. These include navigation, overflight and other activities such as scientific research, commercial and industrial activity, pipelines, installations, fishing etc, subject to various conditions. UN Convention on the Law of the Sea, done at Montego Bay, 10 December 1982, entered into force 16 November 1994, reprinted in 21 ILM 1261 (1982). As of 1 September 2001, it had 137 parties and a further 33 signatories. Most of its provisions, except Part XI, are generally regarded as reflecting customary international law. By virtue of Art. 58 of UNCLOS, Art. 88 also applies to the Exclusive Economic Zone. *See also* Art. 301, which affirms the general duty to use the seas peacefully, consistent with the UN Charter. Vlasic, *supra* note 13, at 41, notes that 'peaceful' cannot mean 'non-military' in this context – in light of state practice in carrying out naval manoeuvres and weapons testing on the high seas. *Cf.* the express link to 'peaceful purposes' is not made in the 1958 Convention on the High Seas, 450 UNTS 82. It refers only to freedoms exercised under "general principles of international law," and subject to the requirement to have "reasonable regard to the interests of other States" – Art. 2.

XI, regarding ‘the Area,’ provides that it “shall be open to use exclusively for peaceful purposes by all States.”⁸⁸ The much briefer text of the 1971 Seabed Treaty simply recognises, in its first preambular paragraph, “the common interest of mankind in the progress of the use and exploration of the seabed and the ocean floor for peaceful purposes.”⁸⁹ The Antarctic Treaty reaffirms the use of Antarctica exclusively for peaceful purposes.⁹⁰

7. ‘DEFENSIVE’ AND ‘NON-AGGRESSIVE’ USES OF OUTER SPACE

Military and weapons applications of space technology encompass a range of systems in addition to weapons of mass destruction and ‘conventional’ missiles. They include anti-satellite systems, having a capacity to destroy hostile satellites, and satellite defences with the capacity to protect ‘friendly’ ones.⁹¹ They envisage ‘exotic’ measures such as kinetic and directed-energy, shields, decoys, sensors, ‘jammers,’ counter-anti-satellite mechanisms etc. At a minimum, while accepting that only limited prohibitions apply, ‘aggressive’ systems of any kind stationed anywhere in outer space are inconsistent with the peaceful use and exploration of outer space. This applies to activities in Earth orbit, moon orbit, on the moon itself, on other celestial bodies or in the ‘outer void space’ between such

88. UNCLOS, Art. 141. Defined in Art. 1(1) of UNCLOS to mean “the sea-bed and ocean floor and subsoil thereof beyond the limits of national jurisdiction.” Arts. 143 (marine scientific research and training of personnel) and 147 (mainly dealing with installations, notification, non-interference, etc.) of UNCLOS describe activities which may be accommodated in the Area and in the marine environment, when carried out exclusively for peaceful purposes.

89. Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof, 11 February 1971, entry into force 18 May 1972. As of 1 January 2001, it had 95 parties.

90. Art. I provides:

1. Antarctica shall be used for peaceful purposes only. There shall be prohibited, inter alia, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons.
2. The present treaty shall not prevent the use of military personnel or equipment for scientific research or for any other peaceful purpose.

1 December 1959, entered into force 23 June 1961, 402 UNTS 71. As of 1 September 2001, it had 44 parties. *See also* Art. V, prohibiting any nuclear explosions and the disposal of radioactive waste in Antarctica. Subsequent conventions adopted at the Consultative Meetings held pursuant to Article IX of the Treaty include the 1972 Convention for the Conservation of Antarctic Seals, 1080 UNTS 175; and the 1980 Convention on the Conservation of Antarctic Marine Living Resources, reprinted in 19 ILM 941 (1980). *See also* the 1991 Madrid Protocol on Environmental Protection to the Antarctic Treaty, 4 October 1991, reprinted in 30 ILM 1455 (1991), designating Antarctica “as a natural reserve, dedicated to peace and science” – Art. 2. Note that tourism, subject to controls, and advance notice, is recognised as a legitimate use – Art. 3.4.

91. Cleminson, *supra* note 36, at 38.

bodies and their spheres of influence. A weapon may still be regarded as 'aggressive,' and not exclusively defensive, if it has the 'objective capability in itself of attack,' even if that is not its intended use.⁹²

As a basic premise, activities which are not of themselves peaceful do not become peaceful simply by being associated with a peaceful purpose, though they may legitimately co-exist with or accompany the peaceful purpose, if not specifically prohibited or excluded. The features and severability of various aspects of an activity may then become relevant.⁹³ However, given the residual ASAT capabilities of missile defences "avoiding the weaponisation of space while pursuing missile defence will not be easy."⁹⁴ Anti-satellite systems and their close connection to ballistic missile defence systems⁹⁵ have posed the greatest challenge to date to the debate regarding the peaceful use of outer space, and pose the risk of 'asymmetric' ASAT or related developments by weaker states, and also potentially by non-state actors. The recent terrorist attacks in the United States have demonstrated the devastating effects of certain asymmetric methods, but it does not change the conclusions reached here. Whether it is argued that missile defences are of little current relevance, or are now more relevant, they are also vulnerable to other asymmetric means of attack.

Despite the end of the Cold War in the early 1990s, and even prior to 11 September 2001, other recent developments had renewed this debate in a different form. In its 1999 report, the Advisory Board on Disarmament Matters described the missile defence question as an "old issue dressed in new clothes."⁹⁶

Certain military purposes, or activities usually entailing military involvement, as well as a range of non-military purposes, are treated not as 'peaceful purposes,' but as having distinct characterisations. It cannot be denied that 'defensive' weapons or weapons-related activities, engaged in by a state or its nationals in, or 'reaching into,' outer space, and under

92. See I. Kuskevelis, *Space Law: Views of the Future (1988)*, in Haanappel & Kok, *supra* note 61.

93. E.g., see the definition of "nuclear weapons" in the Treaty of Tlatelolco, *supra* note 83. Cf. see prohibitions on equipment specifically designed for use "directly in connection" with the employment of munitions and weapons falling within the definition of "Chemical Weapons" – CWC, Art. II.1(c).

94. Krepon, *supra* note 35, at 6–7.

95. Such as the Strategic Defense Initiative – see C. Cristol, *Arms Control and Disarmament in Space: The Rough Road to Vienna 1984 (Part 1)*, 1 *Space Policy* 34 (February, 1985); cf. Myers, *supra* note 8, at 68. See also Krepon, *supra* note 35, at 2, commenting on the January 2001 Rumsfeld Report, *supra* note 3, which urges US "power projection in, from, and through space." Krepon notes, at 5, that the US has "powerful incentives to avoid developing ASATS [...] [as] [...] missile defense systems cannot function properly unless the space-based surveillance systems on which they depend are inviolable."

96. UN Doc. A/54/218, on the work of the Board's 32nd (20–22 January 1999) and 33rd (29–30 June 1999) sessions. Established at the 10th special session of the UN General Assembly in 1978, the Board consists of eminent persons and scholars who advise the UN Secretary-General annually on disarmament and arms control.

its jurisdiction and control, serve military purposes or are directed towards military applications, though they may be ‘non-aggressive.’ At the same time, it cannot be maintained that they serve peaceful purposes, much less that they are ‘exclusively’ for peaceful purposes. ‘Peaceful’ means something more than simply ‘non-aggressive,’ although it is no longer, if it ever was, a sustainable interpretation to equate it simply with ‘non-military.’ Even ‘exclusively peaceful’ comprehends a level of involvement of military personnel and equipment (as long as it is not for military purposes, or ‘measures’ of a military nature).

To the extent that any co-existing or incidental peaceful purpose is severable from a military purpose, the military purpose should be regarded as serving a military purpose alone, and thus not ‘peaceful’ at all. It is more difficult to assess whether a given military activity using outer space, which is intended to “increase the power of the *armed* forces of a State or a group of States,”⁹⁷ may not serve concurrent, or even primarily, peaceful purposes. At least before the end of the Cold War period, such an assessment tended to lie closer to the realm of strategy, international politics and the balance of power; advantage could be derived from an essentially peaceful purpose simply on the basis of who did what first. Outer space remained a special case – an exotic zone – but at the same time a ‘military playground,’⁹⁸ with real consequences for the Earth.

8. DUAL USE AND THE EMERGENCE OF NEW NORMS OF PEACEFUL USE

There is no doubt that the outer space treaties are deficient. They reflect neither current realities nor do they constitute an effective bulwark against weaponisation of space. The void space between methods of warfare and peaceful purposes disappears into a kind of legal black hole, when it is considered that “the more developed countries blend defence, civil and commercial satellite systems for military purposes as well.”⁹⁹ Indeed, this even:

[R]aises questions about international space policies, vulnerabilities, and what constitutes an act of war in space during times of heightened international tensions.¹⁰⁰

Issues arise relating to permitted methods of warfare and ‘satellite char-

97. As asserted by Wassenbergh, *supra* note 61 (emphasis in original). If what is suggested is an increase in arms (or arguably ‘armed power’), rather than in a purely strategic sense, this would seem to correspond more closely to a military than a peaceful purpose.

98. *Id.*

99. P. McFate & S. Graybeal, *The Relationship of the ABM Treaty to Strategic Stability and Outer Space*, in Beier & Mataja, *supra* note 36, at 26.

100. W. Scott, *War Game Raises New Space Policy Dilemmas*, Aviation Week and Space Technology, 23 February 1998, at 98, cited in McFate & Graybeal, *supra* note 99.

acterisation.’ A given satellite may be, at various times, (a) dual-use, under the jurisdiction and control of a single state,¹⁰¹ and used by that state alone, but also (b) used by a number of different states, even opposing sides to a conflict,¹⁰² for military as well as commercial or other civilian purposes; it may also be applied to other ‘peaceful purposes,’ such as the delivery of international humanitarian assistance, whether in natural¹⁰³ or conflict-caused disasters, or in verification of humanitarian, disarmament or arms control norms.

Missile systems, including missile defences, would involve space-based sensors and more, as well as destruction of missiles in space. In such circumstances, if it came to a question of satellite-targeting, any consideration of the international obligations, transnational commercial interests and liability concerns – and the huge potential social and political costs – would involve highly complicated decision-making. Debris from exploded objects would start to ‘fill the void space’ in a manner such as to pose increased risks to manned and unmanned space objects, including those of the targeting state. Potentially unlimited liability would arise for damage caused to third states.¹⁰⁴ It would also set a precedent for weaponisation that could not be undone. Strategically, from a proliferation perspective, if not from a humanitarian one, such a decision would have potential significance as great as any decision, past or present, to deploy nuclear weapons. The multi-dimensional potential for instability, in terms of the maintenance of international peace and security, is clear.

Concurrent with these developments, however, new norms are emerging, supported by the trend to commercialisation of outer space. Even in the early 1980s, when it was estimated that roughly three quarters of satellites launched up to that time by the United States and the former Soviet Union served military purposes, it was observed that “not one of these launchings registered has been described as serving a military function.”¹⁰⁵ This had occurred despite the fact that Article IV of the 1975 Registration Convention¹⁰⁶ requires launching states to notify certain information to the United Nations Secretary-General, including the *general function* of the relevant space object.

101. In theory, the state registering the satellite as a ‘space object’ under the 1975 Registration Convention, *supra* note 65.

102. *E.g.*, ARABSAT, during the 1992 Gulf War.

103. *See, e.g.*, 1998 Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations, text available at <http://untreaty.un.org/English/nopubl/25-4eng.htm>.

104. *See* 1972 Liability Convention, *supra* note 65, Art. IV. Additional debris issues arise under a boost-phase missile interceptor proposal, involving weaponisation of the atmosphere, but it has certain technical advantages and perhaps the prospect of debris falling mainly on enemy territory.

105. *See* D. Goedhuis, *Some Observations on the Efforts to Prevent a Military Escalation in Outer Space*, X *Journal of Space Law* 14–18 (Spring, 1982); referred to in Myers, *supra* note 8, at 70.

106. *Supra* note 65.

Ironically, such a lack of transparency (generally, and increasingly, regarded as most undesirable) was suggested at that time as capable of playing a confidence-building role.¹⁰⁷ At the turn of the century, however, when “the space market has shifted from a military to a commercial/civil dominance”¹⁰⁸ a different understanding of peaceful use may be coming to the fore. Such changes include the expansion of dual-use technologies, objects, and applications, “wherein the performance of many commercial systems has reached the military requirements of a few years ago”:¹⁰⁹

Today, civil space systems from several sources can provide at low cost and frequent coverage the data for many or most tactical and strategic military decisions [which is] [...] perhaps the most significant trend of the last decade, and must be a significant driver in the future of treaties and agreements.¹¹⁰

In this context, recent developments such as the growth in remote sensing applications and the ready availability of data,¹¹¹ the adoption of treaties for the use of satellites in forecasting, monitoring, and mitigating the effects of natural disasters,¹¹² the focus of major space endeavours, such as the international space station, and forums for international co-operation on ‘realising the benefits of space technology,’¹¹³ are, instead, all indicative of a newly emerging construct of peaceful use of outer space. Although the reality of military use of space cannot be discounted, the question is one of permissible extent. It is a sustainable interpretation that the notion of peaceful purposes is not distorted unduly by encompassing space-based verification activities:

Observational capabilities can be considered as security-enhancing, and are rapidly becoming a cornerstone of world disarmament. They are likely to remain so and are highly complemented by the civil capabilities. However, the weaponization of space is believed not to have developed yet, nor is space thought of as being militarized (in the sense that the military control access to it).¹¹⁴

A fundamentally passive posture is clearly more consonant with any meaningful application of the concept of peaceful purposes, than is military predominance. However, it has been noted that, if misunderstanding and conflict are to be avoided, this “interrelationship between the commercial

107. Goedhuis, *supra* note 105, at 15; Krepon, *supra* note 35, at 6–7.

108. Osborne, *supra* note 38, at 7.

109. Goedhuis, *supra* note 105, at 15. See also B. Iannotta, *Setting the rules for remote sensing*, in *Aerospace America* 34 (April 1999), reporting the capability, subject only to regulatory approvals, of privately-operated satellite imagery to achieve 1 metre resolution.

110. Osborne, *supra* note 38, at 6.

111. See also Principles Relating to Remote Sensing of the Earth from Space, UN General Assembly Res. 41/65, UN Doc. A/RES/41/65 (3 December 1986).

112. Cf. 1998 Tampere Convention, *supra* note 103. As of 31 January 2002, it had 10 parties and a further 42 signatories.

113. E.g., the UNISPACE III Conference, Vienna, July 1999.

114. Osborne, *supra* note 38, at 13.

exploitation of space and the legitimate concerns related to peace and security” requires careful management and co-operation, particularly in the context of the “mutually reinforcing” roles of the Conference on Disarmament (‘CD’) – which remains the “single multilateral disarmament forum of the international community”¹¹⁵ – and UNCOPUOS.¹¹⁶ The stalling in the CD’s agenda during the past several years, including its failure to agree even on a programme of work, notably on nuclear issues and on the item “Prevention of an Arms Race in Outer Space”, or on the re-establishment of an *Ad Hoc* Committee on the outer space question, poses a significant threat to the future disarmament process.¹¹⁷ This has

115. CD/1586; *see also* Dhanapala, *supra* note 9, at paragraph 22, noting the address of the UN Secretary-General to the 810th plenary session of the CD on 26 January 1999 (CD/PV.810). *Cf. see* UNGA Res. 55, *supra* note 54, describing the CD as having the “primary role” in negotiating multilateral agreements. Between 1985 and 1992, an *Ad Hoc* Committee on Outer Space was established under the CD. It was given the mandate every year to

examine and to identify, through substantive and general considerations, issues relevant to the prevention of an arms race in outer space [...] [taking] into account all existing agreements, existing proposals and future initiatives as well as developments which have taken place since the establishment of the Ad Hoc Committee in 1985.

However, the lack of a negotiating mandate limited work to consideration of the meaning of “weaponization” – or “devices or installations capable of attacking, damaging or disrupting the functioning of spacecraft in space, or of objects in air, on land or at sea” – as distinct from “military satellites for command, control and communications.” Calls were made during this time for clearer rules regarding the peaceful use of space, and to provide greater protection to objects in space. *See* D. Sinclair, *Outer Space: The Conference on Disarmament Dimension*, in Beier & Mataja, *supra* note 36, who mentions other proposals made during this period, including by Venezuela and other Latin American states, by France and the former Soviet Union, Australia, Canada, and others: “Sweden called for a Treaty to ban all space weapons, including weapons directed against targets in space [and for other measures including] the multilateralization of the [...] ABM Treaty ban of [...] space-based ABM systems.” More recent proposals have also been made (*e.g.*, by India) for ‘rules of the road,’ and by China, *supra* note 10. *See also* P. Alves, *Prevention of an Arms Race in Outer Space: A Guide to the Discussions in the Conference on Disarmament*, UNIDIR/91/79 (1991), especially at 12–15 and 131–133, as well as the detailed technical analyses of various space weapon technologies to that time.

116. Cleminson, *supra* note 36, at 37, 40–41. On the role of UNCOPUOS, *see also* UN General Assembly Res. 38/80, UN Doc. A/RES/38/80 (15 December 1983), which had given greater emphasis to co-ordination on the militarisation question. In relation to the militarisation of outer space and the international community’s desire to prevent an arms race in outer space, states engaged in several years of inter-forum jockeying. An UNCOPUOS agenda item on this subject was modified in 1984 by the UN General Assembly to read “ways and means for maintaining outer space for peaceful purposes,” UN General Assembly Res. 39/96, UN Doc. A/RES/39/96 (14 December 1984). The arms-related question currently occupies priority status in the CD, though with little real progress to date. To the extent that advances are made, the work of these bodies is intended to be complementary.

117. On 22 January 1998, Canada called for the *Ad Hoc* Committee to be established and to have the mandate to negotiate a convention for the non-weaponization of outer space. Despite early positive signals from a number of countries, including Austria, China, France, Germany, India, The Netherlands and the Russian Federation, the process reached a ‘stalemate’ in 1999 – *see supra* note 9; *also* Sinclair, *supra* note 115, at 30–31. UNGA 54/53 (L.22), *supra* note 54, invited the CD to “complete the examination and updating” of the

been described previously by the UN Under-Secretary-General for Disarmament Affairs as symptomatic of more general difficulties in the nuclear field.¹¹⁸ In his 1999 report to the UN General Assembly, Secretary-General Kofi Annan described it as a “major setback.”¹¹⁹ In normative terms, the stakes are also particularly high. In the absence of action specifically on outer space, more detailed attention is paid in the following section to issues arising under certain other regimes.

9. NON-PROHIBITED PURPOSES – THE CWC, AND NEGOTIATIONS FOR A BTWC PROTOCOL

Under the CWC, the permissible use of chemicals (including for military purposes and in weapons) depends on them not being used because of their toxic effects to “cause death, temporary incapacitation or permanent harm to humans or animals.”¹²⁰ Moreover, any toxic chemicals, not only those listed in the Schedules in the Annex on Chemicals and to which the Convention’s verification measures apply, may be prohibited as a “chemical weapon” or, instead, used for non-prohibited purposes. Relevant chemicals are defined in terms of their purposes, not their toxic properties.¹²¹

Article II.9, CWC defines “Purposes Not Prohibited Under this Convention” to mean:

- (a) Industrial, agricultural, research, medical, pharmaceutical *or other peaceful purposes*;
- (b) *Protective purposes*, namely those purposes directly related to protection against toxic chemicals and to protection against chemical weapons;
- (c) *Military purposes not* connected with the use of chemical weapons and not dependent on the use of the toxic properties of chemicals *as a method of warfare*;
- (d) *Law enforcement* including domestic riot control purposes.¹²²

mandate of 13 February 1992, and to establish an ad hoc committee “at the earliest during the 2000 session of the [CD].” The other major item is the beginning of negotiations on a Fissile Material Cut-Off Treaty.

118. Dhanapala, *supra* note 9.

119. UN Secretary-General Kofi Annan, Statement to the UN First Committee, October 1999. But note the establishment in 2000 of a panel of experts on the missiles issue, *supra* note 54, to report in 2002.

120. Art. II.2 (emphasis added). Thus, as reaffirmed in a Preamble to the CWC, the question of the use of herbicides as a method of warfare (*i.e.*, where damage is purely environmental) is otherwise left to general international law and to treaties such as ENMOD.

121. See Part A of the Annex on Chemicals – Guidelines for Schedules on Chemicals. Broadly speaking, Schedule 1 chemicals are those with the highest risk of being used for chemical weapons purposes and have little or no use for non-prohibited purposes. Schedule 2 chemicals generally pose a significant risk but have other uses, though not generally produced in large commercial quantities for non-prohibited purposes. Schedule 3 chemicals pose risks but have extensive non-prohibited commercial applications.

122. Emphasis added.

It might be argued that ‘other peaceful purposes’ under sub-paragraph (a) encompass the purposes enumerated in sub-paragraphs (b) to (d). It is submitted that this cannot be the case. A qualitative distinction is drawn here between peaceful purposes and other purposes. By their very nature, even when used or developed only as a means of protection or for international or internal security, these other purposes are not essentially, or even significantly, ‘peaceful,’ nor are they serving any eventual peaceful use or application. For example, a non-prohibited ‘military purpose,’ under sub-paragraph (c), includes the use of chemicals in weapons, as long as they are not used for their toxic effects on humans and animals. Any weapon, even if containing chemicals in its working parts or mechanisms for purely functional reasons, or if only activated by a chemical reaction, clearly serves no peaceful purpose at all. Similarly, police and security forces are not engaged in scientific, agricultural, or industrial endeavour, or research work, when they carry weapons for use in domestic law enforcement, whether they use guns with ‘live’ ammunition or rubber bullets, tear gases, water cannons or other riot control measures.

Unlike under the CWC, Article II of the BTWC expressly includes “protective purposes,” as well as “prophylactic purposes,” as categories of peaceful purposes.¹²³ In effect, peaceful purposes and non-prohibited purposes are treated as synonymous. However, in earlier negotiations for a verification Protocol, conducted by an *Ad Hoc* Group (‘AHG’) of the states parties to the BTWC, there was no proposal to add “military purposes not connected with the use [of bacteriological agents] as a method of warfare” nor “law enforcement, including domestic riot control purposes” to a list of non-prohibited purposes – for obvious reasons. This demonstrates aspects in which biological and chemical processes and applications may be differentiated. An earlier proposed definition of “other peaceful purposes” in the draft BTWC Protocol – now rejected by the United States – had also repeated the listed purposes in Article II.9(a) of the CWC, with the addition only of “veterinary purposes.”¹²⁴

123. One elaboration suggested earlier, for inclusion in Art. II of the draft BTWC Protocol, was prophylactic purposes (“those involving the identification, prevention and treatment of diseases caused by biological agents and toxins”) and protective purposes (“those directly linked with protection from biological weapons”). These reflect the two aspects of “protective purposes” in Art. II.9(b) of the CWC, namely, protection against toxins and protection against weapons.

124. See BWC/AD HOC GROUP/51 (Part I), 6 April 2000, Procedural Report of the Nineteenth Session of the Ad Hoc Group, Geneva, 13–31 March 2000, Ann. I rolling text, Art. II.5. An earlier version, following the Sixteenth Session, BWC/AD HOC GROUP/47 (Part I), 15 October 1999, proposed a finite list, which could have added some clarity and precision.

10. PEACEFUL PURPOSES UNDER (BIOLOGICAL) STRAIN – PROTECTION, CO-OPERATION, DEVELOPMENT

Despite its rejection on 25 July 2001 of the entire ‘approach’ being taken in the negotiations for a draft Protocol to the BTWC, the United States is now seeking to refine alternative proposals to strengthen the BTWC and prevent the proliferation of biological weapons, including through stricter (national) export controls, (national) criminalisation of activity violating the BTWC, as well as “intensified non-proliferation activities, increased domestic preparedness and controls, enhanced biodefense and counter-bioterrorism capabilities, and innovative measures against disease outbreaks.”¹²⁵

Although the United States put emphasis on other matters it could not accept in the draft BTWC Protocol, the negotiations provide a case study of the difficulties faced in sustaining an interpretation of peaceful purposes that encompasses defensive weapons systems. This section provides a brief description of certain developments in the BTWC Protocol negotiations, with a direct bearing on this issue.

In the final composite text of the draft BTWC Protocol, definitions were proposed for many terms, including “bacteriological (biological) and toxin weapons” and “purposes not prohibited by the Convention,” although a definition of “hostile purposes” in the rolling text was omitted from the composite text.¹²⁶ The composite text took a conservative stance. It used the language of Article I of the BTWC itself for these first two fundamental definitions, to ensure that no definitions in the Protocol would have the effect of amending the Convention prohibitions.¹²⁷ A number of other definitions were proposed (for the purposes of declarations), including “biological materials,” “national biological defence programme(s) and/or activities against bacteriological (biological) and toxin weapons,” and “vaccine.”¹²⁸ The elements of the definition of (national) biological defence programmes, etc., were controversial, and saw many versions. The com-

125. See Statement of the Honourable John R. Bolton, Under Secretary of State for Arms Control and International Security, United States Department of State, to the Conference on Disarmament, Geneva, Switzerland, 24 January 2002, 1, at 4; and Statement by Ambassador Mahley, US Special Negotiator, Geneva, 25 July 2001. Note that a composite text, prepared by the Chairman of the AHG, and released on 3 April 2001 (BWC/AD HOC GROUP/CRP.8), for the AHG 23rd Session in April/May, contained the ‘clean’ parts of a ‘rolling text’ negotiated over the previous four years, and some ideas for compromises – for both texts, see BWC/AD HOC GROUP/56, Anns. A and B.

126. Arts. 2.3 and 2.20 of the composite text; Arts. II.3, II.12, and II.20 of the earlier rolling text.

127. There is disagreement within the *Ad Hoc* Group regarding any definitions in the Protocol of terms found in Art. I of the BTWC itself. Some view such proposals as having the effect of amending the BTWC outside the Art. XI procedures, and beyond the mandate of the Group. Other members of the Group reject that it would have an amending effect, and regard such definitions as indispensable for the purposes of a verification mechanism.

128. Composite text, Arts. 2.5, 2.12, and 2.24, respectively. “Biological materials” is a new definition. An earlier definition of “biological defence facility” was omitted in the composite text.

posite text retained the notion of programmes/activities designed to “protect or defend” or to “detect or assess,” but omitted earlier references to “prevent, reduce and/or neutralize.”

Draft Article 13.1, on assistance and protection, also envisaged their narrower, ‘sheltering’ and passive aspects (alarm systems, sensors, protective equipment, decontaminants, diagnostics etc), similar to Article X.1 of the CWC. Draft Article 13.3 provided for the “fullest possible exchange of [...] information concerning means of protection [...],” and draft Article 13.2 provided:

Nothing in this Protocol shall be interpreted as impeding the right of any State Party to conduct research into, develop, produce, acquire, transfer or use means of protection against biological and toxin weapons, for purposes not prohibited under the Convention.

Unravelling the relationship between protective purposes and bio-defence under the BTWC became a complex task, particularly in the area of any overlap with non-prohibited purposes. In balancing the security and confidence-building aspects, including measures for verification and for international co-operation and exchanges, the draft BTWC Protocol faced a test in relation to the meaning of peaceful purposes.

This is because peaceful, protective, and non-prohibited purposes are treated as consonant under the BTWC itself. References in the draft BTWC Protocol to protective purposes or biological defence programmes which are designed to ‘prevent, reduce and neutralize the impact’ (on whom?), might be regarded as potentially encompassing anti-missile weapons systems. This seems a far cry from any rational concept of ‘peaceful purpose.’ If exchanges for peaceful purposes included missile defence, it seems inconceivable that the terminology could be applied in such a way that ‘peaceful purpose’ becomes virtually synonymous with proliferation of weapons systems and technology on a global scale, in which all states are entitled to participate, and to demand the ‘benefits.’ On the other hand, if such systems were included in non-prohibited (and thus ‘peaceful’) purposes, but were not subject to technical exchanges for peaceful purposes, an imbalance would be created. It also implies that bio-defence is in a ‘less than peaceful’ category in certain respects under the BTWC. The strain was showing.

Article 14 of the composite text of the draft BTWC Protocol also set out in considerable detail the provisions regarding scientific and technological exchange for peaceful purposes and technical cooperation, including measures to avoid hampering the economic and technological development of states parties. The CWC already contains provisions related to trade and development, and Article XI.2 of the CWC provides for technical exchanges for “purposes not prohibited.”¹²⁹ It requires states parties to:

129. See also BTWC, *supra* note 22, Art. X(2).

- (c) Not maintain among themselves any restrictions, including those in any international agreements, incompatible with the obligations undertaken under this Convention, which would restrict or impede trade and the development and promotion of scientific and technological knowledge in the field of chemistry for industrial, agricultural, research, medical, pharmaceutical or other peaceful purposes [...].¹³⁰

On the other hand, the CWC specifically includes prohibitions, relating to transfers to states not party to the Convention of chemicals listed in Schedules 1 and 2 of the Annex on Chemicals. Schedule 1 chemicals may only be transferred between states parties and only for very limited purposes (not including ‘industrial’ and ‘agricultural’ purposes, which are sub-categories of peaceful purposes), in limited quantities and may not be retransferred.¹³¹ Similarly, paragraph 31 of Part VII of the Verification Annex banned transfers of Schedule 2 chemicals to or from non-parties three years after the CWC entered into force, namely from 29 April 2000.¹³² In this way, it is intended that trade in relevant toxic chemicals and their precursors be regulated and transparent.¹³³ The fact that important ‘dual use’ chemicals may continue to be traded only among states parties is a key incentive to promote universality of the Convention.

11. LAW ENFORCEMENT, RIOT CONTROL, AND HOSTILE PURPOSES

This section expands upon the ‘intermediate zone’ discussed earlier, in Section 4; this relates to certain activities such as riot control, and the use of other terms such as hostile purposes. These present a complex picture regarding their own content; at the same time, they illustrate that there is more than a theoretical requirement for a robust concept of peaceful purposes. The potential for loopholes may be expected in the interme-

130. Emphasis added. *Cf.* the Australia Group is an informal consultative mechanism that exists between primarily Western states for the coordination of export controls on various items, including chemical weapons precursors and equipment. The concerns of developing states about the continuation of such controls after entry into force of the CWC, posing a possible threat to their economic development, even if they became parties to the CWC, required reassurances from the Australia Group and the inclusion in Art. XI.2(e) of an undertaking to ‘review’ existing national regulations. *See* T. Findlay, *Peace through Chemistry: The New Chemical Weapons Convention*, at 38 (1993). *Cf.* the Missile Technology Control Regime (‘MTCR’) is the major, informal institutional mechanism controlling missile proliferation.

131. *See* Part VI, Verification Annex.

132. End-use certificates are required under para. 26 of Part VIII, Verification Annex in relation to Schedule 3 chemicals transferred to states not party to the CWC, in advance of any decision that may be made in future under para. 27 of that Part to impose bans or restrictions on such transfers. Such restrictions could have serious consequences for the chemical exports of non-member countries.

133. Transfers of Schedule 1 chemicals must be reported in advance to the OPCW and transfers of Schedules 2 and 3 chemicals must be declared to the OPCW (thus contributing to transparency) – *see* Parts VI, VII, and VIII of the Verification Annex.

diated zone; there is cause for concern when such grey areas have the potential to infect core values. However, the very existence of this intermediate zone sheds light on the fact that peaceful purposes may co-exist with other activities, including military and intelligence-related activities, but that peaceful purposes have separate and distinct qualities, and are not encompassed within such other activities.

As with the protection, defence, and international co-operation provisions under the BTWC, the concept of law enforcement is also caught within a prohibited/non-prohibited dichotomy under the CWC. Article I.5 of the CWC prohibits the use of riot control agents as a method of warfare. However, “[l]aw enforcement including domestic riot control purposes”¹³⁴ is excluded from purposes prohibited under the CWC. This has the effect, through the links between paragraphs 1, 7, and 9 of Article II, of including chemicals used for law enforcement within the concept of ‘chemical weapons’ but excluding them from prohibitions on their use as long as:

- (i) in accordance with Article II.1, “the types and quantities are consistent with such [non-prohibited] purposes”;
- (ii) for riot control agents, in accordance with Article II.7, the chemical is not listed in a Schedule; and
- (iii) for riot control agents, if the chemical is not listed in a Schedule, its effects are temporary in the terms specified in Article II.7.¹³⁵

The second condition above is easily applied. The third condition is readily understood and operates to describe the ‘types’ mentioned in the first condition.¹³⁶ Only the notion of “quantities [...] consistent with such purposes” in the first condition creates an area of imprecision, and potentially a considerable loophole, in the CWC regime. The loophole is not so wide, as some would argue, as to exclude altogether chemicals that may be used as riot control agents from the scope of the definition of “chemical weapons.”¹³⁷

134. CWC, Art. II.9(d).

135. *I.e.*, including ‘knock-out agents,’ broader than usual for riot control; see W. Krutzsch & R. Trapp, *A Commentary on the Chemical Weapons Convention*, at 36 (1994).

136. *Id.*, at 18.

137. Thus, Art. I.5 should be regarded as a clarification that the ban on the use of chemical weapons includes riot control agents, if used as a method of warfare: Krutzsch & Trapp, *id.*, at 42, 57.

Consequently, if agents defined by that paragraph 7, as being of a type suited for non-prohibited purposes under Article II, paragraph 9(d), would be used nevertheless as a means of warfare, this would be a *use of chemical weapons* because of the absence of a ‘purpose not prohibited under this Convention’. It would be legally no different from a situation when mustard, phosgene or any other toxic dual purpose chemical is used as a method of warfare. The same would apply to any other activity related to such chemicals prohibited under Article I, paragraph 1. [...] This will prevent arguments in view of the protracted discussion on the question whether the use of such [riot control] agents in armed conflicts is prohibited by the Geneva Protocol of 1925 and under customary international law prohibiting the use of such weapons

Some limited guidance on relevant ‘types and quantities’ may be derived from the different declaration thresholds applicable to the various scheduled chemicals,¹³⁸ but also having regard to command structures, to justify legitimate purposes.¹³⁹ However, the imprecise boundaries on permissible levels of production of such chemicals pose a real threat to the object and purpose of the Convention. Moreover, the prohibition on scheduled chemicals in domestic law enforcement applies only to riot control agents.¹⁴⁰ A scheduled chemical could still be used for other law enforcement.¹⁴¹ Again, the political compromises in the text of the CWC should not be ignored, but neither should continued efforts to ensure an interpretation consistent with international law.¹⁴² This is particularly the case when the primary, though not the sole, purpose of the CWC regime is a system of universal and verifiable destruction of all chemical weapons, and methodical monitoring of chemicals and their precursors which may be used in their production.

The distinction between use of chemicals as a ‘method of warfare’ and use for (domestic, internal) law enforcement¹⁴³ recalls similar distinctions made in humanitarian law. Article I of AP II of 1977, as well as AP I, distinguish between international and non-international armed conflicts (which are regulated by international humanitarian law) and internal disturbances and tensions (which are not). It also recalls Article 2.7 of the UN Charter, regarding matters essentially within the domestic jurisdiction of a state.¹⁴⁴ However, in the context of the CWC, it raises the spectre of the production of dual-use, or multi-use, toxic chemicals or precursors

at 18 (emphasis in original). Art. X.8 of the CWC also removes any doubt that use of riot control agents as a method of warfare is a use of chemical weapons by providing: “Each State Party has the right to request and [...] to receive assistance and protection against the use or threat of use of *chemical weapons* if it considers that: [...] (b) Riot control agents have been used against it as a method of warfare.” (Emphasis added.)

138. CWC Verification Annex, Parts VI (Schedule 1), VII (Schedule 2), and VIII (Schedule 3). Production of other unscheduled ‘discrete organic chemicals’ (‘DOCs’) must be declared also, though the declaration thresholds are higher – 200 tonnes per annum per facility, or 30 tonnes per annum for DOCs containing the elements phosphorus, sulphur or fluorine (‘PSF chemicals’) – Part IX, Verification Annex.

139. Krutzsch & Trapp, *supra* note 135, at 42.

140. *Cf.* Adamsite, a non-scheduled warfare agent with properties similar to riot control agents, may also be prohibited as a chemical weapon, depending on the interpretation of its purpose – *see id.*, at 36, n. 30.

141. *E.g.*, hydrogen cyanide for capital punishment. Riot control agents (*e.g.*, tear gases) can be produced, and even used during armed conflicts as long as they are for riot control purposes (*e.g.*, in prison camps), but they still have to be declared under Art. III of the CWC; Krutzsch & Trapp, *id.*, at 42.

142. *See* the 1969 Vienna Convention on the Law of Treaties, entered into force 27 January 1980, Trb. 1972 No. 51; Art. 31.1 (ordinary meaning, in context, in light of object and purpose) and, for signatory states, Art. 18 (not defeat object and purpose of the treaty).

143. For discussion of the possible distinction between ‘domestic’ and ‘non-domestic’ riot control (the latter being some form of internationally accepted law enforcement), *see* recorded national statements of Mexico and the USA in CD/1170, as noted by Krutzsch & Trapp, *supra* note 135, at 42.

144. *Supra* note 56.

that may have peaceful applications, but also significant (non-prohibited) enforcement and riot control uses, as well as potential for employment as methods of warfare.

Although the Article II.7 definition of 'riot control agent' includes the element that it have a temporary disabling effect,¹⁴⁵ this provides little comfort if the agent may be adapted for more general, and lethal, use. Therefore, it is the general purpose 'types and quantities' criterion, discussed above, that is described, albeit somewhat cautiously, as the in-built safeguard of the CWC.¹⁴⁶ Riot control agents have not yet been included in the Schedules and "enlightened state practice [...] would be the only bulwark against abuse."¹⁴⁷ The need for a uniform interpretation of the general purpose criterion then assumes considerable importance.¹⁴⁸

Finally, during the BTWC Protocol negotiations, earlier proposed definitions of 'hostile purposes' appeared to relate only to use of biological and toxin weapons by a state against another state. However, as Meselson observed,¹⁴⁹ the principle remains, under the injunction of "never in any circumstances," that it is prohibited to develop or acquire biological agents for use by a state against its own population. A narrower definition of 'hostile purposes' in the Protocol would have been inconsistent with Article I. It would also be contrary to the object and purpose of the BTWC, which seeks to "exclude completely the possibility of bacteriological (biological) agents and toxins being used as weapons."¹⁵⁰ Use against a state's own population makes it no less a use as a weapon. As it was, the composite text of the draft BTWC Protocol omitted earlier definitions of 'hostile purposes.' However, the rolling text had defined hostile purposes as "[a]ny purpose, which has no prophylactic, protective or other peaceful intention," and an alternative also included "[t]he use of bacteriological

145. Cf. disabling chemicals such as the anticholinergic glycollate BZ have longer term effects, though with less scope to date for use as a method of warfare – see Meselson & Robinson, *supra* note 17, at 4.

146. Together with the declaration obligations on possession of chemical weapons, and the fact that 'toxic chemicals' are not confined to those listed in the Schedules. See also Proposed Guidelines submitted to US Senate Foreign Relations Committee, 9 July 1994; Pugwash Papers by A. Chayes, M. Meselson & R. Justin Smith, *The Meaning of the "Law Enforcement" and "Military Purposes" Provisions of the CWC*, in C. Vaughn (Ed.), Papers for 3rd Workshop of the Pugwash Study Group on the Implementation of the Chemical and Biological Weapons Conventions, Noordwijk, The Netherlands (1995), and J. Matousek, *General Purpose Criterion of the Chemical Weapons Convention and the Schedules: New Super-Toxic Lethal Agents, Toxins and Riot Control Agents*, in *id.*, at 1–3 (1995).

147. Meselson & Robinson, *supra* note 17, at 6.

148. *Id.*; also Matousek, *supra* note 146, at 9. Moreover, chemicals developed for riot control must be declared to the OPCW under Art. III.1(c), but those developed for other law enforcement purposes are not subject to declaration requirements.

149. See M. Meselson, *The Meaning of "Hostile Purposes" in the BWC*, Working Paper delivered to Pugwash Meeting No. 246, 11th Workshop of the Pugwash Study Group on the Implementation of the Chemical and Biological Weapons Conventions, Noordwijk, The Netherlands, 15–16 May 1999, 1 (1999).

150. And see the third Preamble of the proposed Protocol.

(biological) or toxin weapons or the threat of use by a State with a view to inflicting *military, economic or other damage*.¹⁵¹

12. CONCLUSION

Peace itself is a dual concept.¹⁵² Industrial co-operation may be a peaceful purpose, but it is hardly a state of peace in the traditional sense. Even agricultural activity may be far from bucolic. Peaceful uses and peaceful purposes require an activity whose aim is peace. They connote more than a lack of hostility, though less than the attainment of perfect harmony. They are part of a process. They involve some positive content, whether in the form of co-operation, confidence-building, assistance or some other activity which can be categorised as mutually beneficial for all affected parties when compared to the existing state of affairs. This element of relativity – a paramount “compared to what?” standard¹⁵³ – applies to the mechanisms of peace as much as to issues regarding the availability of the various tools of war. This should remain the case even when peace is waged with spacecraft and powerful computers, and wars are fought, at least in part, with hi-tech disabling devices, non-lethal foam and slime!

This is the directional aspect of peaceful purposes. An arms race, weaponisation where none existed before, even stagnation in the process, are all anathema to such purposes. Despite stallings or reversals, only international developments in disarmament, verification and, eventually, the re-direction of productive capacity from military to commercial and other civilian applications and economic development – under a ‘swords into ploughshares’ approach – are consistent with such a direction.

The ‘negative’ aspects of peaceful purposes – the lack of hostility – have hardened into international legal obligations. The duty of non-aggression is clear. On the other hand, the obligatory content of the positive aspects of peaceful purposes remain generally minimal or at an early stage under international law. However, they have crystallised, in certain areas, at least into duties to negotiate in good faith,¹⁵⁴ to co-operate and to facilitate, along a path whose *direction* is clear. In some cases the obligation

151. BWC/AD HOC GROUP/55-1, Ann. I (emphasis added).

152. Chandrashekar, *supra* note 13, at 77, associates “peaceful” with two essential components: “[...] an absence of force or conflict and the presence of calm and tranquility” and concludes, at 97, that “[t]he current international regime of space is not a peaceful regime.”

153. See J. Alexander, *Future War: Non-Lethal Weapons in 21st Century Warfare* at 187 (1999).

154. The International Court of Justice (‘ICJ’) has observed that the principle of good faith is “not of itself a source of obligation where none would otherwise exist” – see the *Border and Transborder Armed Actions case (Nicaragua v. Honduras)*, 1988 ICJ Rep. 69, at 105; though it is a ‘background principle’ for the observance and exercise of international law rules – see M. Shaw, *International Law*, at 82 and 722 (1997), and cases cited therein, including the *Lac Lanoux arbitration*, 24 ILR, at 101, 119 (1957).

goes beyond one merely of conduct, and imports an obligation of result.¹⁵⁵ In others, the denial of the right of use or threatened use, testing and development and, ultimately, the destruction of stockpiles, production bans and trade restrictions, are being implemented regarding some of the most destructive and inhumane of weapons.

The most developed regimes are tasked at the same time with the counterweight of the active *promotion* of peaceful purposes, through international cooperation, assistance and exchange, of the very technologies that are banned for weapons purposes. This requires the concept of peaceful purposes to be given positive content.¹⁵⁶ Although, each regime almost invariably defines its terms “for the purposes of this Convention/Protocol,” the normative influence on international law rules should not be ignored, particularly as peaceful purposes have not been exhaustively defined to date with general application.

Until quite recently, the boundaries of peaceful purposes, and of a number of related or less-than-peaceful concepts, have drifted through a type of ‘void space.’¹⁵⁷ Judicial statements and state practice have confirmed that neither is the level of armaments¹⁵⁸ of a state limited unless accepted, by treaty or otherwise, nor is the use¹⁵⁹ of certain weapons illegal unless formulated in terms of prohibition. However, though “[r]estrictions upon the independence of states cannot therefore be presumed,”¹⁶⁰ freedom and independence of action for states “exists within and not outside the international legal system.”¹⁶¹

Accepting the obvious and un-contentious proposition that aggressive

155. Advisory Opinion of the ICJ in Legality of the Threat or Use of Nuclear Weapons, 1996 ICJ Rep. 226, at para. 98 *et seq.* And see UN General Assembly Res. 55/33D (L.48), UN Doc. A/RES/55/33D (20 November 2000) (meeting record – A/55/PV.69; press release – GA/9829), demonstrating considerable international support for the unanimous ICJ opinion in relation to the obligation to conclude negotiations leading to nuclear disarmament – in 2000 in the UN General Assembly, 163 states voted for, and only France, Israel, Russia, and the USA voted against (and the UK abstained) in relation to the first operative paragraph.

156. *Cf.* under the item ‘Fostering of international cooperation for peaceful purposes in the field of chemical activities’, states parties to the CWC referred this issue to the Executive Council of the OPCW for its further consideration, with a view to the Council forwarding a proposal to the Conference of the States Parties at its Seventh Session, to be held in 2002, for its consideration and approval (C-VI/6, 19 May 2001, Report of the Sixth Session of the Conference of the States Parties).

157. “Every international situation is capable of being determined *as a matter of law*” (R. Jennings & A. Watts, *Oppenheim’s International Law*, 9th ed., at 13 (1992)); though, somewhat disturbingly, the ICJ in the non-binding Nuclear Weapons Opinion, *supra* note 155, at para. 2E of the Dispositif, and para. 97, could not “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”; *cf.* Judge Higgins, Dissenting Opinion, *id.*

158. Case Concerning Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. USA), Merits, 1986 ICJ Rep. 14, at 135.

159. Nuclear Weapons Opinion, *supra* note 155, at para. 52.

160. S.S. Lotus case (France v. Turkey), 1927 PCIJ (Ser. A) No. 10, at 18.

161. Shaw, *supra* note 154, at 150.

use of outer space is not a peaceful purpose – what, in sum, has state practice demonstrated in this void space? First, no evidence of weaponisation to date in outer space. Second, a trend away from substantial military predominance and in the direction of increasing commercial, civilian and co-operative endeavour, albeit with military involvement in many of these activities. Recent developments contrary to this trend, in the early stages of testing of defensive missile systems, should be viewed in this context. The presence of protest and dissent regarding the suggestion of a reversal is also potentially significant.¹⁶² Third, a rapidly closing gap between military and civilian capabilities in major areas of military application, including reconnaissance.¹⁶³ Fourth, an acceptance of positive content for the concept of peaceful purposes in regimes, also applicable to outer space, which:

- (a) ban not only the use of certain weapons and their delivery systems, but also preparations for their use (*i.e.*, weaponisation); and
- (b) though somewhat unevenly, in relation to chemical and biological (bacteriological) weapons, nevertheless treat military and protective purposes, or at least the weaponised aspects of defensive systems, as something less than peaceful purposes.

A normative dividend (if not yet the ‘peace dividend’ awaited by developing nations) is emerging in relation to the meaning ascribed to ‘peaceful purposes.’ It is a result of the cross-sectoral legal influences and the changing state practice mentioned above. It is also influenced by the combined effects of (i) the trend to globalisation, and (ii) the expansion and ‘rapprochement’ of dual-use technologies, applications and production sources – not only in terms of performance levels, but also in terms of delivery.

In an era characterised by internationalisation in its various guises – including international trade, communications, and the production and movement of arms – there is a call for a commensurate “[globalisation of] the principles of peace and development in the UN Charter.”¹⁶⁴ Developments in the international agenda, such as the preservation and protection of the environment and the exploitation, commercialisation and regulation of space, as well as of other resources beyond traditional territorial jurisdiction, by taking on the character of “non-traditional security

162. See also UN General Assembly Res. 55/33A, *supra* note 54; and UN General Assembly Res. 55/33B, UN Doc. A/RES/55/33B (L.2/Rev.1) (20 November 2000) (meeting record – A/55/PV.69; press release – GA/9829) on the ‘Preservation of, and Compliance with, the ABM Treaty’ – whole resolution as amended, 88 for, 5 against (Albania, Honduras, Israel, Micronesia, and USA) and 66 abstentions in the UN General Assembly in 2000.

163. See I. Sourbes & Y. Boyer, *Technical Aspects of Peaceful and Non-Peaceful Uses of Space*, in Jasani, *supra* note 13, Chapter 4, at 59, referring to the major groups of military satellites for reconnaissance, communication, navigation, weather, and geodesic and scientific purposes.

164. Dhanapala, *supra* note 9, at 11.

challenges,”¹⁶⁵ are contributing to this trend. In addition, the notion of “specially affected states” is broadening.¹⁶⁶ Not only has the number of space-capable nations increased substantially from the original two, but there is the potential for all nations to derive, and demand, a range of benefits from the activities now conducted in and from outer space.¹⁶⁷

The vulnerability of satellites to ASATs is also relevant. Much has been written of a technical nature regarding the prevention of an arms race in outer space, including on the functionality, performance and role of various satellites, weapons systems and the like.¹⁶⁸ For all its detail, this can lead ultimately to a rather static and limited analysis.¹⁶⁹ It will be most valuable when the parameters of the fundamental principles are determined with greater precision. The alternative path, attempted in the present study, has been one which seeks to “force postures and doctrinal concepts,”¹⁷⁰ by drawing on influences beyond the confines of outer space law. Another difficulty with a purely functional approach is that it risks too easily being confounded by the inescapability of dual use. Dedicated systems are one matter, but problems with duality can lead to duplicity.¹⁷¹ If certain trends continue, away from overwhelming military use,¹⁷² the law of outer space, and the logic of giving ‘ordinary meaning’ to treaty terms, can learn to live with the dualities, dichotomies, and balancing acts that abound throughout disarmament, humanitarian and related fields.

Disarmament regimes on earth and in space remain tightly linked. During the technology age, they will not be de-linked. Following the initial race to space, the race to exploit the technological advantages it offers continues unabated. As in many fields, what began as exploitation for

165. Cleminson, *supra* note 36, at 37.

166. *E.g.*, through participation in the benefits of satellite communications, remote sensing, or the transfer of chemical and bio-technology. *See also* Müllerson, *supra* note 48, at 536 *et seq.*, who observes:

International law is not only a set of technical rules or ‘letters’ of various unrelated treaties [...] [u]nilateral acts are prone to affect the legal interests of various States because politically, economically and otherwise, the world is becoming more and more interdependent, and legal principles and norms reflecting, though imperfectly, this interdependence, form a relatively coherent normative system

leading to the “curious situation in which some third States may be more interested in the existence of a treaty than treaty-parties.”

167. The possibility of an *erga omnes* obligation, owed to the international community as a whole, was recognised in the Barcelona Traction, Light and Power Company, Limited case (Belgium *v.* Spain), 1970 ICJ Rep. 2, at 33. A broadening view of “legal interest” has also emerged, *see* Opinion of Judge Schwebel in the Nicaragua case, *supra* note 154.

168. *See, e.g.*, Alves, *supra* note 115.

169. *See* Sourbes & Boyer, *supra* note 163, at 57.

170. *Id.*

171. This is particularly necessary if the notion of ‘peaceful military use’ is accepted, and the debate can be steered away from an unrealistic choice between non-aggressive and non-military purposes. *Cf. see* Alves, *supra* note 115, at 13.

172. Sourbes & Boyer, *supra* note 163, at 59, put military satellites at 50% of all launches in the early 1990s. *Cf.* 75% in the early 1980s, *supra* note 52.

military purposes spread to a range of other applications, though the former has not been supplanted. Recent developments have allowed the growth of civilian and commercial applications. These have been as much the result of political and economic policy decisions as technological advances. They have seen a remarkable growth in launch and satellite services in particular, for remote sensing, telecommunications, and other purposes. In addition to ‘productive’ peaceful uses in agricultural, industrial and scientific fields, technology can support humanitarian objectives in countering the effects of natural disasters, monitoring the spread of diseases, as well as for verification of disarmament and non-proliferation agreements. This has a confidence-building (*i.e.*, self-regulating) security aspect. Sustainable development may also encompass ‘sustainable disarmament’ – the revolution in military affairs (‘RMA’) is finding its counterpart, despite current stalling on a future agenda, in a revolution in disarmament affairs (‘RDA’):

The onward march of computer technology – while presenting its own weapons proliferation risks – is also facilitating the analysis of data about weapons development or deployment activities, helping to improve international safeguards and physical security, and deepening our understanding of the human and environmental effects from the production and use of weapons of mass destruction.¹⁷³

Through elaboration, the term ‘peaceful purposes’ is acquiring meaning beyond the merely aspirational. Specific objects are identifiable in the space between the concepts of ‘methods of warfare’ and ‘peaceful purposes,’ with objective legal content in their own right. Although the outer boundaries, like those of outer space itself, may never be fully mapped or understood, consideration of the inter-relationship between terms assists the process of refinement.

What was once sparse in individual fields is becoming, through cross-fertilisation of concepts and principles, a much more substantial body of law. While the NPT has achieved near universal adherence, the other major disarmament and non-proliferation treaties also have widespread, and increasing, acceptance as do treaties dealing with the rules of armed conflict, including humanitarian and arms control aspects, and other regimes containing the concept of peaceful purposes.¹⁷⁴ Proposals for

173. Dhanapala, *supra* note 9, at 15–16.

174. CWC – 145; BTWC – 144; 1925 Geneva Protocol – 132; PTBT – 131; AP I – 159; AP II – 151; Ottawa Convention – 122; CCWC – 88, including 61 for amended Protocol II and 63 for Protocol IV; CTBT – 90, not in force; UNCLOS – 137; Outer Space Treaty – 96; Seabed Treaty – 95; Antarctic Treaty – 44. Provisions of many of these treaties have customary status, and have had broad participation in their development including signature by varying numbers of additional states – *see also* North Sea Continental Shelf cases (Federal Republic of Germany *v.* Denmark; Federal Republic of Germany *v.* Netherlands), 1969 ICJ Rep. 3, at para. 73, regarding conditions to be fulfilled before a conventional rule may be regarded as a rule of customary international law, including in the practice of states whose interests are “specially affected.” In relation to the threshold for the continued

missile defence are of legal as well as strategic concern, and threaten normative developments supported by the vast majority of states. It is unidimensional, and an abdication of responsibility, to weaken the fabric and content of peaceful purposes, by acknowledging such purposes solely, or primarily, in terms of opposite or counterbalancing principles – the absence of aggression, or ‘allowing’ the pursuit of (national) security.¹⁷⁵ Whether or not there is military involvement in relevant activities, there are important qualitative distinctions between the maintenance of peace and security, the various aspects of law enforcement, aggressive and defensive weapons systems, and the meaning of peaceful use and peaceful purposes. We ignore these differences at our peril. What is at stake is more than a distortion of language. A new era demands more co-operative, affordable, and sustainable solutions.

application of a customary rule – that it retain the support (even if not the wholly consistent support) in the practice and *opinio juris* of the vast majority of states – see R. Higgins, *Problems and Process*, at 21–22 (1994). Also R. Jennings & A. Watts, *supra* note 157, at 1262, concerning third-party obligations which may arise under treaties, even for a dissenting minority of states, “in particular in the sphere of preservation of international peace and security”, cited in Müllerson, *supra* note 48.

175. See, Bolton, *supra* note 125, at 5: “America is committed to the exploration and use of outer space by all nations for peaceful purposes for the benefit of humanity – purposes that allow defense and intelligence-related activities in pursuit of national security goals.”