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# Avoiding Legal Black Holes

## *International Humanitarian Law Applied to Conflicts in Outer Space*

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**Abstract**

The applicability of international humanitarian law (IHL) is not dependent on any domestic legal system, however its enforcement is at least partially subject to domestic application. There are scenarios in which States assert they can derogate from IHL and other rules of international law due to emergency or threats to security. When it comes to hostilities that take place in or through Outer Space, the fact that Outer Space may not be appropriated as sovereign territory means that regulation of military activities and their consequences are truly international. No State can exert exclusive jurisdiction over a breach of IHL that takes place "in" Outer Space. However this also means there is a greater risk of abuse of the rules of IHL by the creation of new legal black holes; if it's up to individual States to interpret and apply these rules, they may attempt to justify unlawful derogations in the name of emergency or security. Generally IHL must apply to space in the same ways it applies to terrestrial conflicts, in the sense that justifiable derogations for reasons of national security are truly exceptional and very limited. The question then arises, can States derogate from either the space treaties or from IHL under claims of State security? This paper argues that the international rule of law ensures their continued application in times of conflict in Outer Space, and provides a set of principles that ensure the risk of legal black holes is limited.

### I. Introduction

In times of hostilities and conflict, States will naturally take whatever action is necessary to protect their interests and their security. The law of armed conflict regulates what States may do lawfully in such situations, in order to limit the potential of chaos in international relations, and to limit the potential effects of wars on humanity. This has been the case throughout the history of the regulation of warfare, harking back at least as far as Chinese military tactician Sun-Tzu's "The Art of War" in the 5th century B.C.[1] For centuries, this was predominantly a case

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1 Lawrence P. Rockwood, "Walking Away from Nuremberg: Just War and the Doctrine of Command Responsibility", (University of Massachusetts Press, Amherst, 2007), p. 20.

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of custom; concepts of honour and "conduct befitting a soldier" prevailed, and since the 4th century A.D. Augustinian notion of "just war" governed behaviour during conflicts.[2] From the 19th century on there was a trend to codify international custom, and the Augustinian tradition was carried into the Lieber Code, a product of the US civil war.[3] The further codification of the customs of warfare in the early 20th century has made a great impact on today's lawful and acceptable conduct during conflict, including the so-called Hague Conventions which laid down principles of land warfare,[4] and following the Second World War, the Geneva Conventions[5] and various treaties governing methods and means of warfare. Many of these rules have also been recognised as customary international law, applicable to all States regardless of whether they have signed or ratified the relevant treaties. Although suffering and destruction still takes place during armed conflicts, in general there is adherence to these limiting rules; States realise the importance of reciprocity, and breaches of these rules are the exception rather than the expectation.

Nonetheless there have been some examples in recent history of States pushing the boundaries of these limits in the name of a "state of emergency", claiming that extraordinary situations may lead to extraordinary measures. One such example is the creation of a legal "black hole" for those individuals who were detained as terrorist suspects following the attacks of September 11 2001; legal advisors to the State Department of the US argued that these individuals were "illegal enemy combatants" and as such could be arrested and detained as prisoners of war, but did not have the right to protection and treatment guaranteed to prisoners of war under the fourth Geneva Convention.[6] Many individuals were arrested in their country of residence and transported by so-called "extraordinary rendition" to prisons and camps in another country, where their basic human rights were denied and they were subjected to torture. The

2 *Ibid.* p 28.
3 Instructions for the Government of Armies of the United States in the Field (Lieber Code). 24 April 1863.
4 Convention (I) For The Pacific Settlement Of International Disputes (Hague I) (29 July 1899); Convention With Respect To The Laws And Customs Of War On Land (Hague, II) (29 July 1899); Adaptation to Maritime Warfare of Principles of Geneva Convention of 1864 (Hague, III); (July 29, 1899); Declaration Prohibiting Launching of Projectiles and Explosives from Balloons (Hague, IV); (July 29, 1899).
5 Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, (Geneva I)(12 August 1949); Convention (II) for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea, (Geneva II) (12 August 1949); Convention (III) relative to the Treatment of Prisoners of War, (Geneva III)(12 August 1949); Convention (IV) relative to the Protection of Civilian Persons in Time of War, (Geneva IV)(12 August 1949).
6 Joseph P Bialke, "Al-Qaeda & (and) Taliban-Unlawful Combatant Detainees, Unlawful Belligerency, and the International Laws of Armed Conflict" (2004) 55 AFL Rev 1.

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US administration asserted the right to unilaterally suspend the international obligations applicable during conflict in the name of national security.[7]

However when it comes to the law of armed conflict and some other fundamental regimes of international law, exceptions to their application should be kept to a minimum. These "legal black holes" into which the individual detainees fell were highly contentious and the majority of international lawyers argued that they were an unlawful interpretation of international humanitarian law.[8]

The law of armed conflict, or international humanitarian law (IHL), is universally applicable and not dependent on any domestic legal regime. However the invention of a new category of persons taking part in hostilities as "illegal" and the legal black hole that came with it, demonstrate that the *application* of international law – or lack thereof – is still in many ways dependent on State will and State actions. It is a question of enforceability rather than applicability. When a State considers that its security is under threat, and claims a "state of emergency" under which some international legal obligations may be suspended, there is a risk that a unilateral interpretation may push the boundaries of IHL.

In the context of outer space this susceptibility to an expansive interpretation has an unusual dimension. In the immediate future it is less likely that this would be with respect to the rights of detainees, since there aren't many humans in space. Rather there is a risk that, for example, there would be different interpretations of when the use of force would be lawful as an act of self-defence. Do we want to leave it up to States to interpret this question unilaterally in times of emergency? Other examples are the lawfulness of targeting of dual use satellites, given the risk of collateral effects on Earth, or the question whether the potential creation of space debris should be part of any calculation of proportionality when seeking to physically destroy a satellite. The

7 Sanford Levinson, "Constitutional Norms in a State of Permanent Emergency" (2005) 40 Ga L Rev 699; Sanford Levinson, "Torture in Iraq & the rule of law in America" (2004) 133:3 Daedalus 5; William E Scheuerman, "Emergency Powers and the Rule of Law After 9/11" (2006) 14:1 Journal of Political Philosophy 61.

8 Thomas J Bogar, "Unlawful Combatant of Innocent Civilian-A Call to Change the Current Means for Determining Status of Prisoners in the Global War on Terror" (2009) 21 Fla J Int'l L 29; Michael Dorf, "What is an Unlawful Combatant, And Why it Matters: The Status of Detained Al Qaeda and Taliban Fighters" (2002) FindLaw: Legal News and Commentary; Ryan Goodman, "The Detention of Civilians in Armed Conflict" (2009) American Journal of International Law 48; Michael H Hoffman, "Terrorists Are Unlawful Belligerents, Not Unlawful Combatants: A Distinction with Implications for the Future of International Humanitarian Law" (2002) 34 Case W Res J Int'l L 227; "ICRC Policy Document on Torture and Cruel, Inhuman or Degrading Treatment Inflicted on Persons Deprived of their Liberty" 93:882 International Review of the Red Cross 1; Levinson, *supra* note 7; Clive Stafford Smith, *Bad Men: Guantánamo Bay and the Secret Prisons* (London: Phoenix, 2008).

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fact that such activities would take place out of sight of those of us on Earth, and the fact that outer space belongs to no single State, means there is a risk of the "tragedy of the commons"; if States act only out of concern for their own security, who is to say they will take into consideration the risks of creating more space debris, or the collateral effects of targeting a dual use satellite? Although the *applicability* of international humanitarian law (IHL) is not dependent on any domestic legal system, its enforcement is at least partially subject to domestic *application*.

Does this leave us with a bleak picture of the status of IHL in space? If spacefaring nations consider it entirely up to them to unilaterally determine what is lawful during a conflict in outer space, are we not left with a risk of chaos, with States asserting multiple interpretations and regimes of IHL applicable at any given time? Or worse, a state of lawlessness? Not if we operate on the assumption of the Rule of Law in space. Because international space law is a part of public international law, and because Article III of the Outer Space Treaty specifies that all space activities must be conducted in accordance with international law, it would only be a rogue State that would claim that IHL and the general principles of international law do not apply during a situation of conflict in or through space. The Rule of Law, and the commitment the international community has to it, guarantee against legal black holes appearing in space in a time of conflict.

Part II of this paper will discuss the notion of a "state of emergency", and the tensions that exist between the Rule of Law in outer space and a "state of emergency" as giving rise to possible exceptions to international obligations. In Part III the unique geographical and jurisdictional challenges that outer space pose will be discussed, as will other potential legal black holes during a conflict in outer space. In Part IV a number of legal principles will be enumerated which operate as limits on any exceptions to international obligations, even in a state of emergency. Finally it will be concluded that legal black holes can be avoided in a situation of conflict in outer space if States recognise the basic tenets of the Rule of Law, which is also in their own interest.

## II. The Rule of Law versus a State of Emergency

### II.1. "State of Emergency" in International Law

The notion of a "state of public emergency" stems from nineteenth century Western Europe, and constitutes a situation in which a State justifies suspending certain international obligations.[9] Along the same line, since the twentieth century the core human rights treaties have permitted derogations from States' obligations to protect these rights if there is a situation that constitutes a

9 Scott P Sheeran, "Reconceptualizing states of emergency under international human rights law: theory, legal doctrine, and politics" (2012) 34 Mich J Int'l L 491 at 491.

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"public emergency which threatens the life of the nation," however this exception is subject to a limitation: derogations are only permitted if the measures are "strictly required by the exigencies of the situation."[10] Derogations are allowed under these conditions to allow States to respond to extraordinarily threatening conditions, without having to limit themselves according to broad human rights obligations. Because certain IHL provisions also protect human rights, States have sometimes claimed that a situation of emergency or exception can lead to justified derogation from IHL obligations.[11]

Generally States do not deny that human rights and IHL should continue to apply during a state of emergency,[12] however sometimes the regime that allows certain derogations have been coopted and abused. It was under a claim of a state of emergency that the US created an expansive interpretation of "war" to include the fight against terrorism in the Military Commissions Act, thereby asserting that IHL protections did not apply to individuals who were detained following the September 11 attacks.[13] During the "Arab Spring" uprisings many Arab States had declared a state of emergency and withdrawn significant human rights.[14] The UN Special Rapporteur for States of Emergency concluded that about ninety-five states, or around half of the countries in the world, had been under a state of emergency between 1985 and 1997.[15] The International Commission of Jurists stated in its study on states of emergency described them as "the counterpart in international law of self-defence in penal law."[16]

10 International Covenant on Civil and Political Rights art. 4, Dec. 16, 1966, S. TREATY Doc. No. 95-20, 999 U.N.T.S. 171 (ICCPR); See also Human Rights Committee [H.R. Comm.], General Comment No. 29: States of Emergency, *1* 2, 4, U.N. Doc. CCPR/C/21/Rev.1/Add.11 (Aug. 31, 2001) two fundamental conditions must be met: the situation must amount to a public emergency which threatens the life of the nation, and the State party must have officially proclaimed a state of emergency.

11 Special Rapporteur for States of Emergency, The Administration of Justice and the Human Rights of Detainees: Question of Human Rights and States of Emergency: Tenth Annual Rep., 11 20, 33, 48, Commission on Human Rights, U.N. Doc. E/CN.4/Sub.2/1997/19 (June 23, 1997) (by Leandro Despouy).

12 *Ibid.* p 8.

13 Senate Bill 3930 Military Commissions Act of 2006, S.3930, September 22, 2006; See Jean-Claude Paye Topics: Imperialism & Political Economy, "'Enemy Combatant' or Enemy of the Government?", online: *Monthly Review* <www.monthlyreview.org/2007/09/01/enemy-combatant-or-enemy-of-the-government/>.

14 Sheeran, *supra* note 9 at 493.

15 Special Rapporteur for States of Emergency, *The Administration of Justice and the Human Rights of Detainees: Question of Human Rights and States of Emergency: Final Report*, add., U.N. Doc. E/CN.4/Sub.2/1997/19/Add.1 (June 9, 1996).

16 International Commission Of Jurists, *States Of Emergency: Their Impact On Human Rights*, at iii, 413 (1983).

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### II.2. "State of Emergency" in Space

Because we are so dependent on space technologies for our daily lives, and because militaries are also highly dependent on these technologies, it is conceivable that a situation of conflict in or through space could be read as a threat to the life of a nation. In hypothetical scenarios known as "war games", military lawyers and operators have noted that as soon as a space asset is threatened in any way, even by the activity of a space object belonging to State A passing closely in the orbital path of a satellite belonging to State B without clear communications as to the intention or extent of deliberate movement, tensions escalate rapidly into full-blown conflict.[17] If activities in space are not accompanied by communications with respect to the intentions of the actor responsible, it is possible that the right to use force in self-defence could be called upon and accompanied by claims of a state of emergency. If this set of conditions were to be used as a justification for suspending IHL obligations and protections, the risk of legal black holes would increase; different States interpreting IHL in different ways, or asserting a right to suspend certain obligations would lead to a lack of legal clarity.
However there are limits on the ways in which a state of emergency can justify suspension of international obligations. Apart from the requirement that the measures taken must be "strictly required by the exigencies of the situation", emergency measures must also be proportionate to the actual threat to a nations's life and security, must be temporary, and must be aimed at a return to the normal status quo.[18] Thus a threat posed to satellite operations in a State cannot be used to justify total and temporally unlimited suspension of all IHL protections and obligations.

### II.3. International Law in Space

Apart from the specific limitations on the right to derogate from international obligations during a time of emergency, one thing that is clear is that international law governs activities in outer space, and activities that pass though outer space, including the launch, operation and return of space objects and activities which affect these operations.[19] Article III of the Outer Space treaty states this in no uncertain terms, and even specifies that this includes the UN Charter. There can therefore be no doubt that the law prohibiting the use of force according to Article 2(4) of the Charter applies in space. In fact this norm is considered to be one of the peremptory *jus cogens* rules of international law;

17 This has been noted by a member of the Union of Concerned Scientists, and by the author, in several private conversations with individual US, Canadian and Australian military lawyers.
18 Human Rights Committee General Comment No. 29: States of Emergency, U.N. Doc. CCPR/C/21/Rev.1/Add.11 (Aug. 31, 2001) at para. 2.
19 Stephan Hobe et al, Cologne Commentary on Space Law: In Three Volumes. Outer Space Treaty (Carl Heymanns Verlag, 2009) at 66.

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that is, a rule that can never be derogated from even in a state of emergency.[20] The only time the use of force can be lawful is if it is approved for a temporary and specific purpose as part of a measure of collective security by the UN Security Council under article 42 of the UN Charter, or if it is a temporary and proportionate act of self-defence according to Article 51 of the Charter. These norms also apply in space, by virtue of their peremptory nature, and by virtue of Article III of the Outer Space Treaty.[21] While self-defence could itself be considered a state of emergency, this does not in itself justify the suspension of other obligations, according to the notion of "emergency" under international law. Acts of self-defence must therefore also comply with international law requirements, as will be discussed further in the next section.

As Manfred Lachs wrote in 1972, outer space had never been a lawless area, but rather had always been subject to international law, though the matter could never have been put to the test before.[22] Two decades later, the International Court of Justice (ICJ) declared in its opinion on the Legality of Nuclear Weapons that IHL, "applies to all forms of warfare and to all kinds of weapons, those of the past, those of the present and those of the future."[23] IHL will therefore always apply to future conflicts in space. The question remains whether States will respect this to its fullest.

That international law stakes an exclusive claim over the governance of activities in space is further underlined by Article II of the Outer Space Treaty, which stipulates that outer space "is not subject to national appropriation by claim of sovereignty, by use or by any other means". The exercise of domestic jurisdiction requires the ability to exert sovereignty over the territory, or in this case, over the physical domain of outer space, which is prohibited by the treaty, and since its writing, by customary international law. This means that no State may exercise its domestic laws to the exclusion of other domestic legal regimes, and that international law shall always prevail. It is true that there is some extra-terrestrial reach of domestic laws in the physical domain of space, to the extent that space objects are registered according to the Registration Convention as falling under the jurisdiction of the launching State,[24] and activities of non-governmental entities in outer

20 Alexander Orakhelashvili, *Peremptory norms in international law* (Oxford University Press Oxford, 2006) at 50.

21 Hobe et al, *supra* note 19 at 67; Jackson N Maogoto & Steven Freeland, "The Final Frontier: The Laws of Armed Conflict and Space Warfare" (2007) 23:1 Connecticut Journal of International Law 165 at 1.

22 Manfred Lachs, The Law of Outer Space: An Experience in Contemporary Law-Making, Reissued on the Occasion of the 50th Anniversary of the International Institute of Space Law, (Martinus Nijhoff Publishers, 2010) at 125.

23 Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 259 (July 8).

24 Article II, Convention on the Registration of Objects Launched into Outer Space.

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space require authorization and constant supervision of the relevant State.[25] However this amounts to jurisdiction over an object, and not over the physical domain of outer space, nor over the activities of others in outer space.
In general terms, then, the International Rule of Law should prevail over all activities in outer space. But in times of conflict, we have seen States sometimes push the boundaries of the law, and the unique domain of space is likely to prove even more susceptible in some ways to creative interpretations in the name of State security or emergency.

## III. Potential Legal Black Holes in Space Conflict

The "geography" of outer space offers challenges unique to any other environment or domain that is governed by international law. Although comparisons are often drawn to the legal regime governing the Antarctic, or the high seas, since these regions are also not subject to the sovereign claim of any single State, there remain some differences in space. The most obvious is that we do not know at what point "outer space" begins and sovereign airspace ends.[26] This means that the physical space in which sovereign jurisdiction ends and the exclusive and supreme claim of international law begins may not be clear, and the potential for a "legal black hole" in the space in between may be greater. It is agreed that Low Earth Orbit (LEO) begins at approximately 160km above the Earth is and there is therefore no contention that this is outer space.[27] But what about the "grey area" between this and the current upper limit of approximately 60km of any airplane flight? Can States unilaterally interpret their airspace as extending to whatever height is strategically beneficial during a conflict? Could there be, rather than legal black holes, asserted overlaps of multiple legal regimes in this physical space between certain sovereign jurisdiction and certain outer space?
The reason these questions are of importance is that different rules of IHL apply in different physical spaces. The law with respect to international armed conflicts, involving two or more States, differs slightly from the law on non-international armed conflicts, between one State's government authorities and armed groups within that same State.[28] While many argue that the differences between these laws are fading, there are some important differ-

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25 Article VI, Outer Space Treaty.

26 Article 1, Chicago Convention on International Civil Aviation (1944) recognises that "every State has complete and excusive sovereignty over the air-space above its territory". This is generally recognised to be customary international law, See: Francis Lyall & Paul B Larsen, *Space Law: A Treatise* (Ashgate Pub. Limited, 2009) at 160.

27 *Ibid.* at 168.

28 See for example Protocol Additional to the Geneva Conventions Relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977 and Protocol Additional to the Geneva Conventions Relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II), 8 June 1977.

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ences, such as the principle of non-intervention with respect to non-international armed conflict, protecting a State in a situation of internal conflict from the intervention of third States;[29] and with respect to international armed conflicts the prohibition on reprisals.[30]
Similarly with respect to armed conflict on the high seas, it is clear that this physical space begins where territorial seas, exclusive economic zones and continental shelf boundaries end.[31] While in a specific case the exact boundary line may be contested, in general there is clarity as to the physical spaces and therefore the legal regimes that apply. The San Remo Manual on International Law Applicable to Armed Conflicts at Sea specifies that naval warfare may take place on the high seas, that due regard must be given to neutral States, and that IHL applies to this physical space.[32] The question is whether such clarity can be claimed with respect to conflict in outer space.

### III.1. Defining "Conflict in Space"

The unique geography of space has many dimensions. The lack of clarity regarding a line of demarcation between sovereign airspace and the "commons" of outer space is a challenge not only for determining what legal regime applies above or below a certain line, but also with respect to objects that move between these spaces, such as any missile or rocket that has a ballistic trajectory, or in the near future, sub-orbital flights carrying humans for civilian or military purposes. So what is meant, then, by "conflict in space"? Is this any conflict that involves space objects, or only a conflict that takes place above that uncertain line of demarcation?

#### III.1.1. Conflict in Space

Just as there is an international manual clarifying the applicability of IHL to conflicts at sea, the Harvard Manual on International Law Applicable to Air and Missile Warfare clarifies IHL applicable to sovereign and international airspace.[33] It defines "airspace" as "the air up to the highest altitude at which an aircraft can fly and below the lowest possible perigee of an earth satellite in orbit."[34] From this definition, any conflict that would physically take place above the lowest possible perigee of a satellite in orbit would be a "conflict in space". This is a spatial definition, which helps to a certain extent, but there

29 Article 3 Protocol II.
30 Article 20 Protocol I.
31 Article 86, United Nations Convention on the Law of the Sea (1982).
32 Section IV, "San Remo Manual on International Law Applicable to Armed Conflicts at Sea", International Institute of Humanitarian Law, Cambridge University Press (1995).
33 "Manual on International Law Applicable to Air and Missile Warfare", Harvard Program on Humanitarian Policy and Conflict Research (2009), www.ihlresearch.org/amw/manual/ ("Harvard Manual").
34 Article 1(a) Harvard Manual.

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may be other aspects to a conflict which do not take place above this altitude, but which still affects space objects, or which only temporarily take place above this altitude and otherwise fall below this altitude. In this "in-between space", in order to avoid legal black holes or multiple unilateral interpretations of how IHL applies, a functional definition may be needed.

#### III.1.2. Conflict through Space

The first Gulf War in the 1990s is often referred to as the first space war, because during "Operation Desert Storm" there was a high dependence on satellite communications and imaging technologies.[35] Since then the dependence of many militaries on space technologies has increased.[36] Thus, even a conflict on Earth has some space aspects to it. However the question of IHL applied to space surely does not include these situations.

But if a space object were to be used as a weapon with respect to a conflict on Earth, this could be considered conflict "through" space. For instance if one satellite were to interfere with or disable another satellite, in order to disable the communications of a belligerent party to a conflict on Earth. While it may not currently be technologically feasible to direct the course of a satellite to deliberately collide with another satellite, the potential for this in the future should not be discounted, especially given current research being undertaken into on-orbit servicing, which could be utilised for belligerent activities.[37]

Another type of "conflict through space" could be the use of cyber-attacks from Earth to interfere with or disable a satellite in space, or the use of jamming signals from Earth to interrupt signals from a satellite in space.

Conversely, if a ballistic missile were to have a trajectory that traversed through space and back into airspace, it would seem unlikely that this would fall under a regime of IHL applied to space rather than IHL applied to airspace.[38] However it is conceivable that this, too may become a legal black hole according to individual State interpretations.

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35 Alasdair McLean, "A new era? Military space policy enters the mainstream" (2000) 16:4 Space Policy 243; Jackson N Maogoto & Steven Freeland, "From Star Wars to Space Wars – The Next Strategic Frontier: Paradigms to Anchor Space Security" (2008) 33:1 Journal of Air & Space Law 10; Jeffrey L Caton, *Joint warfare and military dependence on space* (DTIC Document, 1996).

36 James A Lewis, "China as a military space competitor" (2004) Center for Strategic and International Studies 2; Maogoto & Freeland, *supra* note 35; Jackson N Maogoto & Steven Freeland, "The 21st Century Space Arms Race: Curtailing Heavenly Thunderbolts Through the Shield of the 'Peaceful Purposes' Mantra" (2009) Hyderabad: ICFAI University Press 70; Peter L Hays, *United States Military Space: into the twenty-first century* (DIANE Publishing, 2002).

37 See for example tests undertaken by the US Defence Advanced Research Project Agency (DARPA) on the Orbital Express Space operations Architecture; <http://archive.darpa.mil/orbitalexpress/index.html>.

38 See for example the definition of "air or missile operations" in Article 1(c) of the Harvard Manual: "Air or missile combat operations" mean air or missile operations

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### III.2. Use of Force and Targeting in Space

Because the enforcement of international law can be dependent on domestic application, some sensitive areas in this new domain may be open to the risk of differing unilateral interpretations. Perhaps the most sensitive is the question of the use of force in self-defence, which is only lawful in response to an armed attack.

The use of force is prohibited outright, not only with respect to the waging of war, which was already outlawed in 1928 by the Briand-Kellogg Pact,[39] but also with respect to any use of force short of war such as interventions, blockades or reprisals.[40] Such is the reach of article 2(4) of the UN Charter, and this *jus cogens* norm is now recognised in customary international law.[41] As mentioned above, the use of force can only be lawful if the UN Security Council authorises it under its so-called "Chapter VII" powers of collective security, or if it is an act of self-defence according to Article 51 of the UN Charter. With regards to self-defence, article 51 requires that this be in response to an armed attack; this is a *condition sine qua non.* The armed attack must be underway, or at least "imminent". A "threat" of an armed attack is insufficient to trigger a right to use force in self-defence.[42] The challenging question which must be answered, is what amounts to an armed attack in space, and as long as this remains unclear, the risk of a legal black hole arises, given that States may assert an armed attack has taken place under debatable circumstances.

"Armed attack" is defined in international law in different ways. The important thing is to distinguish between the definition applicable to *jus ad bellum,* or the lawfulness of the use of force, and *jus in bello*, or the law applicable during a conflict. Under the latter, "armed attack" is defined in Article 49(1) of Additional Protocol I to the Geneva Conventions as an "act of violence against the adversary, whether in offence or defence".[43] This term of art is used in order to define a particular type of military operation during an armed conflict to which particular international humanitarian law norms apply, such as the limitations and prohibitions applicable to lawful targeting,

designed to injure, kill, destroy, damage, capture or neutralize targets, the support of such operations, or active defence against them.

39 The General Treaty for Renunciation of War as an Instrument of National Policy, (Paris, 1924), League of Nations Treaty Series, Vol 94, online: www.yale.edu /lawweb/avalon/imt/kbpact.htm.

40 Giovanni Distefano, "Use of Force" in Paola Gaeta & Andrew, eds, *The Oxford Handbook of International Law in Armed Conflict* (Oxford University Press, 2014) 545 at 545.

41 Military and Paramilitary Activities in and against Nicaragua (Nicaragua v United States of America) (Jurisdiction and Admissibility) [1984] ICJ Rep 392, para. 188.

42 Distefano, *supra* note 40 at 553.

43 *Ibid.,* art 49(1).

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protection of civilians and lawful weapons.[44] It is indifferent as to whether the existence of the conflict is itself lawful. But this is not the same as an "armed attack" for the purposes of defining the threshold of when self-defence is lawful, or the *jus ad bellum* body of law. For this threshold question we must turn to other sources of international law, such as decisions by the ICJ on situations where the question of an "armed attack" has been considered. In the *Nicaragua* case the ICJ found that an isolated minor incident which, by the manner in which it takes place, cannot be mistaken for a threat to the safety of the State would not qualify as armed attack under Art. 51 UN Charter.[45] This would be a kind of lower limit. However in the *Oil Platforms Case* the ICJ considered whether a series of minor attacks could cumulatively be considered to amount to an armed attack.[46] Although it did not find so under the facts of the case, some have argued since that the fact the ICJ considered it demonstrates that it may be possible under a different set of facts.[47] Furthermore the attack must be undertaken with the "specific intention of harming".[48]

This requirement of an intent to harm may be opaque in the domain of space, given that States are not always willing to communicate their intentions with respect to space activities. One example is Russian Object 2014-28E, launched in May 2014 as part of a military communications satellite launch. The object itself was not registered, and it was assumed that it was a piece of space debris, until it began a series of manoeuvres including meeting up with the remains of the rocket stage that launched it. While this may have been a case of testing on-orbit servicing, the fact that Russia made no clear statement as to the purpose of the object raised concerns in the media as to whether this may have been a weapons test.[49] Given the potential discussed above for escalation between States if activities in space are not accompanied by communications

44 Mike Schmitt, "'Attack' Is a Term of Art in International Law: The Cyber operations Context" in C Czosseck, R Ottis & K Ziokowski, eds, *4th International Conference on Cyber Conflict* (Tallinn, Estonia: NATO CCDCOE Publications) 283 at 285.

45 Nicaragua v United States of America, *supra* note 41, para. 195.

46 Oil Platforms (Islamic Republic of Iran v United States of America) [2003] ICJ Rep 161, para. 64.

47 Yoram Dinstein, *War, aggression and self-defence* (Cambridge University Press, 2011) at 195; Karl Zemanek, "Armed Attack" in Rüdiger Wolfrum, ed, *Max Planck Encyclopedia of Public International Law* (Oxford University Press, 2013).

48 Oil Platforms Case, para. 64.

49 See e.g. Andrew Griffin, "Is Russia flying a satellite killer around space? Unidentified Russian satellite prompts space weapon worries", *The Independent* (18 November 2014), online: The Independent <www.independent.co.uk/news/world/is-russia-flying-a-satellite-killer-around-space-unidentified-russian-satellite-prompts-space-weapon-worries-9867149.html>; Michael Listner & Joan Johnson-Freese, "Object 2014-28E: Benign or Malgnant?", *Space News* (8 December 2014), online: Space News <http://spacenews.com/42895object-2014-28e-benign-or-malignant/>.

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with respect to the intentions of the actor responsible, it is possible that the right to use force in self-defence could be called upon and accompanied by claims of a state of emergency in situations which are quite simply unclear.

Another question that the unique domain of space raises is whether the disabling or damaging of a satellite by means of jamming, dazzling or cyber interference would amount to an "armed attack" in the sense of *jus ad bellum*. This type of non-kinetic interference is more likely to be the course of action of a belligerent than the outright destruction of a space object, since the non-kinetic activities may be more difficult to trace and less costly. Without a clear definition this kind of situation might also give rise to the claim of a state of emergency or a right to suspend international obligations against the use of force in retaliation. Is the targeting of a satellite by means other than kinetic weapons really an "armed attack"? Another international manual, the Tallinn Manual on Cyber Warfare, gives a definition of cyber-attack as "a cyber operation, whether offensive or defensive, that is reasonably expected to cause injury or death to persons or damage or destruction to objects."[50] If we apply this to a cyber-attack on a satellite, it would seem that there is a potential for damage, destruction and possibly even injury or death as a secondary effect, as a result of critical communications or other space-reliant technologies being interrupted. Under such circumstances a State may be able to claim a right to self-defence, however to allow this right as soon as any level of damage has been caused would be to allow escalation in a domain where this is exactly what we should restrain.

If we return to the questions posed in the introduction regarding lawful targeting of satellites, there is much in the body of law of IHL that should be applied as a matter of international law. This is a question of *jus in bello*. For instance, the principle of proportionality is enshrined in Article 51(5)(b) of Additional Protocol I to the Geneva Conventions, and Article 55 provides that methods and means of warfare that may be expected to cause "widespread, long-term and severe damage" to the environment are prohibited. In the case of kinetic destruction of a space object, we know from tests undertaken by China, Russia and the US[51] that the space debris caused by such methods cause widespread, long-term and severe damage to the space environment, and a hazard to all

50 Rule 30, Tallinn Manual on International Law Applicable to Cyber Warfare, Cambridge University Press (2013).

51 See 'Chinese ASAT Test', *CelesTrak,* online: CelesTrak <http://celestrak.com/events/asat.asp>. Earlier ASAT tests by the Soviet Union also created space debris: See Union of Concerned Scientists, "A History of Anti-Satellite Programs", online: Union of Concerned Scientists. <www.ucsusa.org/nuclear-weapons/space-security/a-history-of-anti-satellite-programs#.VdPpS5fgU-0>. Regarding the creation of space debris by the US launch of a missile in 1985 to destroy its own aged Solwind satellite, James Moltz, *The politics of space security: strategic restraint and the pursuit of national interests* (Stanford University Press, 2011), p 202.

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future space activities. Proportionality would therefore dictate that such outright destruction of a space object would rarely, if ever, be lawful.

Similarly, the question of targeting dual use satellites may be a source of tension among space faring nations, who fear the targeting of their own satellites but also know the strategic advantage of targeting an adversary's space assets due to our high reliance on these technologies for military activities. the principle of distinction, which is central to *jus in bello* and must apply to any decision to target a space object just as it does to conflicts on land, at sea or in the air. According to Article 48 of Additional Protocol I, which is considered to be reflective of customary international law, parties to a conflict must "at all times distinguish between [...] civilian objects and military objectives and accordingly shall direct their operations only against military objectives". Article 52 of Additional Protocol I defines military objectives as "those objects which by their nature, location or use make an effective contribution to military action [...]",[52] as long the targeting of such objectives do not result in disproportionate collateral damage.[53]

However, the specificity of the space environment raises questions. One predominant problem in space is that many objects are "dual use", servicing both civilian and military purposes. Although it could be said based on nature, location, or use that targeting a particular satellite would provide military advantage, the potential fallout for civilians in the case of destroying or even disabling a dual use satellite could be disastrous considering the extremely high level of dependency of civilian life on the technology the satellite provides. Article 54 of Additional Protocol I outlaws the attack against, destruction of or rendering useless of "objects indispensable to the survival of the civilian population",[54] however it only lists thing such as food, crops, livestock, and water and only prohibits "denying them for their sustenance value to the civilian population". The question is whether the technology or services provided by a specific satellite or space applications would amount to something indispensable to the survival of the civilian population.

As such it may be possible to say that kinetic attacks on space objects are prohibited according to international law, as are attacks which result in disproportionate collateral damage or risk technologies indispensable to the survival of the population. It is true that these are factual calculations that must be left in the hands of States which may find themselves in such new, unknown conflict situations, and may find their own space assets threatened by adversaries. The risk of unilateral interpretations may therefore remain, but one thing that can be said is that the risk of legal black holes are reduced if we look to existing bodies of international law.

52 Article 52(2) Additional Protocol I.
53 Article 57(2)(iii) Additional Protocol I.
54 Article 54(2) Additional Protocol I.

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## IV. Avoiding Legal Black Holes through the Rule of Law

### IV.1. Rule of Law in Space

There are some general limitations on the suspension of IHL obligations during a conflict in or through space. The underlying one, upon which all other limits are built, is the fundamental Rule of International Law; even in a state of emergency the rule of law must prevail. As the Inter-American Court of Human Rights has stated, that the suspension of human rights does not imply "a temporary suspension of the rule of law, nor does it authorize those in power to act in disregard for the principle of legality by which they are bound at all times."[55]

This means that even though there may be conditions under which some specific obligations may be suspended, a total disregard for IHL requirements in space can never be justified. A state of lawlessness or legal chaos due to differing interpretations will always be bounded in some way.

Part of the international rule of law is the law of treaties, as codified in the Vienna Convention on the Law of Treaties (VCLT),[56] and as recognised in customary international law. The VCLT does allow for modification of a treaty obligation, but not if it is with respect to an obligation the derogation from which "is incompatible with the effective execution of the object and purpose of the treaty as a whole."[57] This therefore limits derogation from fundamental protections guaranteed such as the prohibition on torture, the right to minimum standards of humane treatment and the right to life. But it is unclear whether it would limit other rules of IHL regarding targeting and proportionality.

Another possibility for suspending a treaty or certain of its provisions is where there is an unforeseen fundamental change of circumstances, the existence of which constituted an essential basis for the States to enter the treaty in the first place.[58] Historically the outbreak of conflict was considered to abrogate all treaty relations between States until a peace treaty was signed,[59] however this shifted in the twentieth century to an opposite stance. Conflict was not generally considered to be a fundamental change of circumstances in the sense intended in the VCLT, since this exception was meant to prevent States from entering a treaty under a mistake of fact, and not to allow States to withdraw from or suspend treaties due to a shift in political relations. In recent years international law has taken an intermediate position, and it does

55 Habeas Corpus in Emergency Situations (Arts. 27(2) and 7(6) American Convention on Human Rights), Advisory Opinion *OC-8/87,* Inter-American Court of Human Rights (ser. A) No. 8, 1 24 (Jan. 30, 1987).
56 1969 Vienna Convention on the Law of Treaties (VCLT).
57 Article 41 VCLT.
58 Article 62 VCLT.
59 Arnold Pronto, "The Effect of War on Law-What Happens to Their Treaties When States Go to War" (2013) 2 Cambridge J Int'l & Comp L 227 at 230.

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allow for the temporary suspension of treaty obligations between States in conflict, if these relate to economic or political relations between those states.[60]

The question of the effect of conflict on the applicability of treaties has been given due attention in a study undertaken by the International Law Commission (ILC), leading to a set of draft articles.[61] Article 3 states that the "existence of an armed conflict does not *ipso facto* terminate or suspend the operation of treaties", and in its commentary the ILC specified that some treaties are indeed *meant* to apply in times of conflict, such as those covering IHL, methods and means of warfare and the conduct of hostilities, as well as some human rights treaties. In the case of a conflict in space, therefore, States cannot claim that IHL obligations and protections could be suspended due to a state of emergency.

Of course *jus cogens* norms cannot, by definition, be suspended during conflict, since they can never be derogated from.[62] There are also certain obligations which are owed to the international community as a whole (obligations *erga omnes*), which may also not be suspended, whether or not they are considered to be of a fundamental peremptory nature (*jus cogens)*. This is because, even if it were theoretically possible to suspend such obligations as between to belligerent States during conflict, to do so would be to suspend them with respect to all other States, thus breaching the very nature of their universal application. One of these is the obligation under Article IV of the Outer Space Treaty, prohibiting the placement of nuclear weapons or other weapons of mass destruction in orbit around the Earth. Since this obligation is owed by all States to all other States, it cannot be suspended in times of conflict. The same can be said of the body of IHL: war does not exist outside the limits of law.

### IV.2. General Principles as Limits

Even with the general applicability of international law in space, and the specific applicability of IHL, the risk of differing unilateral interpretations may arise in the unique environment of space, where much behaviour of States is unpredictable. For instance, given that the definition of "armed attack" depends in part on the intention of the aggressor, it is important that intentions are made clear. However the fact that most States do not wish to divulge

60 *Ibid.* at 228. See e.g. Eritrea-Ethiopia Claims Commission's finding that "the Parties' bitter international armed conflict [had] fundamentally changed the nature of their relationship…" Civilians Claims by Eritrea, Partial Award of 17 December 2004, para. 38, XXVI RIAA 195, 214; See also The North Atlantic Coast Fisheries case, Award of 7 September 1910, XI RIAA 167, 181.

61 Report of the International Law Commission on its Sixty-third Session', UN Doc A/66/10, 2011, 173ff (*ILC Report*).

62 ICL report p 21.

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their space capabilities in full means that the intent of many activities in space are unclear, compounded by the fact that that there may be unintentional interference or effects of certain activities, which could be read as intentional. If one State is unclear on the intentions of another State, the propensity to claim self-defence, or a state of emergency, may be greater. These exceptions to the prohibition on the use of force and the application of certain specific rules of IHL are only meant to be triggered in exceptional situations, but the new domain of space may be susceptible to premature claims or even their abuse. In these cases, apart from the limits on the doctrine of emergency, and the limits placed on suspending treaty obligations by the VCLT and by the international rule of law as stipulated by the ILC, there are also some general legal principles which operate as a limit on what States can justifiably claim during a situation of emergency.

There are moral underpinnings to the VCLT which are not explicit in its articles, but which are also the underpinnings of the modern system of international law as a whole. One of these is the imperative for a system that functions based on reciprocal respect and the desire for stability. If States claim exceptions to one treaty in a time of tensions, there is no longer any guarantee of adherence to other treaty obligations. In today's time of international interdependence, such a situation would escalate to even greater levels of uncertainty and potential chaos, especially given many other neutral States would be affected by conflict in outer space. It is in no State's interest during a time of conflict with one or more States to undermine the surety of its relations with other States.

This relates to another principles which is often seen as carrying little substantial weight, but which underpins all international relations; that of good faith. Treaties are negotiated on the understanding that States will do their utmost to fulfil their obligations. Especially in the case of IHL treaties, which have been given form specifically to regulate during times of hostility, respect for these norms is essential to the survival of humanity.

Aside from treaty relations, much of IHL and the law on the use of force is recognised as customary international law, binding on all States. Even though the enforceability of international law has a weak link in that it is at least in part dependent on the will of States to adhere to it and apply it, those States which do not do so lose moral high ground and become less trustworthy partners, particularly in the space domain where so much has yet to be explored, where uncertainties prevail, and where good international relations are essential.[63]

63 Jeffrey L. Caton, "Joint Warfare and Military Dependence in Outer Space", JFQ Winter 1995-1996, <http://fas.org/spp/eprint/LSN3APP2.htm>.

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## V. Conclusion

It is clear from the discussion here that the Rule of Law acts as a limit on unilateral interpretations of international law applied to space, even in times of conflict. This is not just a matter of morality, or of a normative aspiration, but rather a matter of legal necessity. Without the limitations of the Rule of Law, there is no system of reciprocity, which is something States in fact prefer. In general States act in accordance with IHL during times of conflict, at least in part because they want to be able to count on belligerent States to do the same. Without reciprocity and without the Rule of Law as the supreme principle guiding all activities in space, there is no system at all. Even during the Cold War, the USSR and the USA recognised very quickly that this was an undesirable state of affairs. As each State tried to gain the "high ground" in space by developing superior technologies, they also recognised that without some respect for rule of international law, and without the fundamental rule agreed to in Article III of the Outer Space treaty that all activities shall be carried out in accordance with international law, neither State could continue to use outer space with any sense of stability or safety.[64]

It is in the interests of all States, and one could say especially in the interests of those who are most active in space, to ensure that IHL is adhered to and claims of suspension or exception are kept to an absolute minimum. As it is stated in the US National Security Strategy of 1994: "Retaining the current international character of space will remain critical to achieving national security goals."[65]

64 Moltz, *supra* note 51.

65 A National Security Strategy of Engagement and Enlargement, 1994, <http://nssarchive.us/national-security-strategy-1994/>.