THE RESPONSIBILITY FOR PRIVATE ACTIVITIES IN OUTER SPACE: WHERE IS THE CLUE TO THIS PUZZLE?

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Summary

Abstract

The need to resolve the question of State responsibility for private space activities has gained urgency in recent decades in parallel with the increasing number of private corporations participating in space ventures. According to Article VI of the Outer Space Treaty, States shall authorise, supervise and bear international responsibility for national activities in outer space, including private ones. This provision nonetheless begs a number of unresolved questions, including whether this responsibility is defined in absolute or qualified terms, the meaning of 'national activities' and identification of the State required to authorise and supervise a space activity. With a combination of theoretical and practical approaches, this article seeks to address these issues and to offer an opportunity to assess the latest developments in this rapidly evolving area of human endeavour.

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1. Introduction

While outer space was traditionally regarded as a sphere of State and intergovernmental organisation activities, the current overall intensification of space business is going hand in hand with an expanding presence of private entities. In the future a substantial increase is expected in international joint space endeavours involving participation by private entities. Against the backdrop of these considerations, the purpose of this article is to analyse the responsibility regime applicable to private space activities, an issue which is becoming increasingly relevant.

In the Outer Space Treaty (OST),[1] two norms regulate responsibility and liability[2] for space activities: Articles VI and VII.[3] These are almost verbatim reiterations of principles 5 and 8 of the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space,

[1] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (adopted by the UN General Assembly on 19 December 1966 (RES/2222 (XXI), opened for signature on 27 January 1967 and entered into force on 10 October 1967) 610 UNTS 205.

[2] It is widely known that there is only one term in French – *responsabilité* – in Spanish – *responsabilidad* – and also in Italian – *responsabilità* - to describe both these notions, yet they are conceptually different. A breach of an international obligation by a State entails its international responsibility, regardless of whether or not any damage is caused (Commentary to Art. 2, par. 9, ILC Articles on State Responsibility). The term 'responsibility' therefore refers to all the obligations that are consequences of an internationally wrongful act. By contrast, liability refers to the obligation to pay compensation. The duty of reparation is generally a secondary obligation because it arises from the breach of a primary obligation. However, liability does not necessarily presuppose a breach of an international obligation, in the sense that in certain cases reparation is a primary obligation (see The Yearbook of the International Law Commission, 1973, Vol. I, p. 211, par. 37). A paradigmatic example of this is precisely the liability for damage caused by space objects, which is merely a consequence of any damage caused regardless of any breach of an obligation. In sum, responsibility arises with breaches of an international obligation and does not require the occurrence of any damage. Liability, on the other hand, may arise without any breach of an international obligation but requires the occurrence of damage. It is not possible here to dwell on the vast doctrinal debate about the existence of a general category of liability without wrongdoing in international law, as was initially elaborated by Jenks during his general course at the Hague Academy of International Law (C. JENKS, *Liability for Ultra-Hazardous Activities in International Law*, Recueil des cours, 1966, vol. 117). An authoritative doctrine holds that cases of so-called liability without wrongdoing could be conceptually contained within a regime of primary obligations the breach of which entailed State responsibility. Cf. A.E. BOYLE, *State Responsibility and International Liability for Injurious Consequences of Acts Not Prohibited by International Law: A Necessary Distinction? ICLQ*, 1990, vol. 39, pp. 1-26; P.M. DUPUY, *La responsabilité internationale des Etats pour les dommages d'origine technologique et industrielle*, Paris, 1976, pp. 225-228. For an analysis of the different theories of liability without wrongdoing, see R. PISILLO MAZZESCHI, *Due diligence e responsabilità internazionale degli Stati*, Milano, 1989, p. 128.

[3] The scope of Article VI differs from that of Article VII. Article VI deals with space activities in general while Article VII is concerned with space objects. Article VI OST focuses on leading space activities under the responsibility of a State; the purpose of Article VII is to identify one or more States to be held liable in the event of damage. Where there is no breach of obligation, there is no State responsibility under Article VI OST. In contrast, liability under Article VII OST arises regardless of the unlawfulness of the conduct.

which was enacted four years earlier by the UN General Assembly.[4] Ever since the entry into force of the OST, these provisions have been reiterated, recalled or presupposed in all subsequent space agreements and resolutions. Combined with the high number of ratifications of the OST, including those by major space powers, this leads us to believe that they have become customary international law.[5] The point is that while the Liability Convention[6] translated the general provisions of Article VII OST into more precise rules and procedures, Article VI OST was merely recalled or reiterated verbatim in subsequent space instruments[7] – an additional reason for a careful examination and interpretation of it.

The quest for the responsibility for private activities in outer space must take important aims into consideration: to safeguard the rule of law in outer space and so to maintain the effectiveness of international law. Article VI OST provides, among other things, that States are responsible for national activities in outer space and must ensure that such activities, including those carried out by 'non-governmental entities,' are carried out in conformity with the Outer Space Treaty.[8] The crux of the matter is to ascertain which State is responsible for a private activity in outer space, and to what extent, more precisely to verify whether the slightly ambiguous phrasing of Article VI OST should be interpreted as an obligation of result or an obligation of conduct. In this regard, and in particular on the pros and cons of each interpretation, there is lively debate in the literature.

The difficulty or outright impossibility for States to control and, if necessary, straighten out activities that take place in outer space might call for a loosening of the rules on responsibility. It would be unjust, one might consider, to hold a State responsible for an unlawful act which it did not perform and which occurred notwithstanding the diligent adoption of all possible measures

[4] UNGA Res 1962, Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, UN Doc A/RES/1962(XVIII) (1963).

[5] *Ex multis* V.S. VERESHCHETIN, *Space Activities of 'Nongovernmental Entities': Issues of International and Domestic Law*, Proceedings of the 26th Colloquium on the Law of Outer Space, 1983, p. 263; F. POCAR, *La codificazione del diritto dello spazio ad opera delle Nazioni Unite*, in F. FRANCIONI and F. POCAR (Eds.), Il regime internazionale dello spazio, Milano, 1993, pp. 34-36.

[6] Convention on International Liability for Damage Caused by Space Objects (adopted by the UN General Assembly on 29 November 1971(RES/2777 (XXVI) opened for signature on 29 March 1972 and entered into force on 1 September 1972); 24 UST 2389, TIAS 7762, 961 UNTS 187 [hereafter Liability Convention].

[7] Article 6 of the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space; Article 14 of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies; Principle F of the Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting; Principle XIV of Principles Relating to Remote Sensing of the Earth from Outer Space; Principle 8 of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space.

[8] See *infra* par. 3.

to prevent it. Moreover, to interpret the norm as establishing an obligation of result with the aim of more extensively protecting victims of damage is not even necessary. The need to ensure the prompt payment of a full and equitable measure of compensation to victims is satisfied by the different rules on liability for damage caused by space objects. In principle, this liability regime is complete, in the sense that no blind spots exist.[9]

At the same time, and in contrast, the same difficulty or impossibility for States to control and, if necessary, straighten out activities that take place in outer space might lead to justifying a strict regime. After all, even admitting that the liability regime is distinct and in itself complete, one might object that some activities, such as the appropriation of celestial territories, do not entail any damage and therefore do not require redress but nonetheless result in a serious violation of international law. Giving States full-fledged responsibility for acts carried out by private subjects would have the merit of avoiding the existence of blind spots in the responsibility regime.

In the absence of relevant case law and clear practice, this conundrum is admittedly not easy to solve. This article first provides an overview of the general international law rules which apply to the responsibility of States for acts by private persons. The content of Article VI OST is then examined and traditional interpretations of it are assessed. Finally, an original interpretation is attempted focusing on a distinction for the same space activity between concerned and appropriate States. This is an area where the *lex specialis* principle is manifestly relevant.[10] It does not require clinical isolation of the special rules from the general ones. The ordinary rules of State responsibility remain applicable. The *lex specialis* principle only means that the general rules are displaced to the extent – and only to the extent – that the parties have provided for in the special regime.

2. The responsibility for private acts under international law

As a general rule, conduct is attributable to a State under international law, and leads to the international responsibility of that State, if it is carried out by a State organ, regardless of the position that organ holds in the State organisation (the so-called subjective element of an internationally wrongful act).[11] This rule implies *a contrario* that conduct carried out by private persons or entities never determines the responsibility of the State, simply because such conduct

[9] On the liability regime for private space activities, see D. ZANNONI, *The Liability Regime for Private Activities in Outer Space: Is There a Normative Gap?*, Archiv des Völkerrechts, 2021, pp. 1-26.

[10] Draft articles on Responsibility of States for Internationally Wrongful Acts, with commentaries, 2001 [hereafter ILC Articles on State Responsibility], Article 55.

[11] ILC Articles on State Responsibility, Article 2(a) read in combination with Article 4.

is not considered an act of the State under international law.[12] This rule knows no exception.[13]

It is admittedly true that international law contains some rules according to which acts or omissions by persons who are not part of the organic structure of the State and are not empowered by ordinary laws and practices to represent the State are attributed to the State. However, this happens on the condition that they *in fact* exercise State functions. In other words, they are *de facto* organs acting on behalf of the State. If such rules did not exist, the State could escape responsibility by merely indicating that such persons were not its *de iure* organs or agents. This situation has given rise to Article 8 of the ILC Responsibility Articles.[14]

Even in the case of *ex post* endorsement in Article 11 of the ILC Responsibility Articles, the State is not responsible for private action. It is responsible for action which has become an action of the State through the particular attribution mechanism envisaged in Article 11. Indeed, according to this Article "if and to the extent that the State acknowledges and adopts the [private] conduct in question as its own," the private conduct changes its legal nature. It becomes an act of the State and, as such, a wrongful international act.[15]

A famous example of subsequent adoption of private conduct by a State is the capture of Adolf Eichmann, which subsequently led to his trial in Israel. It may be that Eichmann's captors were in fact acting on behalf of Israel. More precisely, and using the words of Article 8 of the ILC Responsibility Articles, it may be that they were acting "on the instructions of, or under the direction or control of" Israel, in which case their conduct should be attributed to Israel under Article 8.[16] However, it was not initially clear whether the persons acting on Argentinian soil were private individuals or persons entrusted by Israel with the mission to abduct Eichmann. Even if one admits that the "volunteer group"[17] was not initially acting on behalf of Israel, there is no doubt Israel subsequently adopted the conduct in question, which thus became its own conduct.

[12] See ILC Articles on State Responsibility, Commentary to Article 8, par. 1; Commentary to Article 11, par. 2.

[13] In this sense, also see J. CRAWFORD, *State Responsibility. The General Part*, Cambridge 2013, p. 137; R. KOLB, *The International Law of State Responsibility*, Cheltenham, 2017, p. 99.

[14] For the different case in which sovereign or government authority is delegated to an entity which is not an organ, see Article 5 ILC Articles on State Responsibility.

[15] ILC Articles on State Responsibility, Article 11.

[16] UN Security Council resolution 138 (1960) of 23 June 1960 implied a finding that the Israeli Government was at least aware of, and consented to, the successful plan to capture Eichmann in Argentina.

[17] During the discussion in the Security Council on the complaint, Minister Golda Meir referred to Eichmann's captors as a "volunteer group." Official Records of the Security Council, Fifteenth Year, 866th meeting, 22 June 1960, para. 18.

Article 11 is very clear in saying that conduct acknowledged and adopted by a State becomes its own act: it "shall nevertheless be considered an act of that State," in the sense that it is attributed to the State.[18] It is, however, worth noting that this thesis did not encounter the favour of all during the *travaux préparatoires* for the ILC Responsibility Articles. In particular – and this is a general remark frequently made by G. Arangio Ruiz in his work as a Special Rapporteur – it was noted that acts committed by individuals not occupying any position, even a factual one, in a State's organisation should not be attributed as being of the State. The attribution of the legal consequences of these acts was considered the only conceivable 'imputation' in international law.[19] As mentioned, the final wording of Article 11 dispels any doubt in this regard because it clearly envisages a true mechanism to attribute private conduct to States.

The legal situation is different in those domains where States have an obligation to prevent specific conduct by private persons and entities and 'to ensure' that private activities are carried out in conformity with international law. In these domains, the conduct of a private person does not change its legal nature, in the sense that it is not attributed to a State.[20] The private action is but a fact (or a catalyst) in the event that a State may fail to exercise its international obligations, for instance in the case of omission and default by its own organs of its primary obligations to authorise and supervise. Therefore, there is here a plain application of the general rule that a State is responsible for the conduct of its organs.[21]

To clarify the difference between infringement of an obligation to prevent specific conduct by private persons and entities, on the one hand, and subsequent adoption by a State of particular conduct, on the other, the *United States Diplomatic and Consular Staff in Tehran* case is paradigmatic. In this case, the ICJ drew a clear distinction between the legal situation immediately following the seizure of the United States embassy and its personnel by the militants and that created by a decree of the Iranian State which expressly approved and

[18] Commentary to Article 11, par. 1, ILC Articles on State Responsibility.

[19] See Second Report on State Responsibility, Special Rapporteur G. Arangio-Ruiz A/CN.4/425/Add.1, 9-22 June 1989, in particular par. 176, footnote 427. In similar terms, see P. DE SENA, *Questioni in tema di responsabilità internazionale per attività spaziali*, in F. FRANCIONI and F. POCAR (Eds.), *op.cit*., p. 259, footnote 13.

[20] This subject was extensively covered by the older literature on State responsibility. A bibliography can be found in the Fourth Report of Special Rapporteur Roberto Ago, in Yearbook of the International Law Commission, 1972, paras. 61-146.

[21] For this reason, I. Brownlie argues that the issue of 'responsibility for the acts of private persons' is a "non-question or, in some sense, the wrong question." In each case it is the relevant legal duty which determines the incidence of responsibility. I. BROWNLIE, *System of the Law of Nations. State Responsibility*, Part I, Oxford, 1983, p. 163.

maintained the situation. The Islamic Republic of Iran had been held responsible in relation to the earlier period because of its failure to take sufficient action to prevent the seizure or to bring it to an immediate end.[22] The policy then announced by Ayatollah Khomeini of maintaining the occupation of the Embassy and the detention of its inmates as hostages for the purpose of exerting pressure on the United States was complied with by other Iranian authorities and repeatedly endorsed by them in statements made in various contexts. The approval of these facts by Ayatollah Khomeini and other organs of the Iranian State and the decision to perpetuate them transformed the legal nature of the situation created by the continuing occupation of the Embassy and the detention of hostages and turned them into acts of the State.[23]

The obligations to prevent specific conduct by private persons and entities and 'to ensure' that private activities are carried out in conformity with international law raise the issue of whether the obligation 'to ensure' is to be interpreted as an obligation of absolute result or an obligation of diligent conduct. The general trend is to interpret such obligations as obligations of diligent conduct, arguably with the aim of finding a balance between the two opposite alternatives at stake: on the one hand, holding States responsible for each and every violation committed by persons under their jurisdiction; on the other hand, relying on mere application of the principle that the conduct of private persons is not attributable to States under international law.[24]

Within the category of obligations 'to ensure,' the most paradigmatic example is perhaps the obligation to prevent transboundary harm. Indeed, States have an obligation to "*ensure* that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control,"[25] which no doubt also covers private activities. In the *Trail Smelter* case, for example, the wrongful conduct at stake was in the fact that organs of a State (Canada) permitted a private corporation to use its national territory in such a manner as to cause injury from fumes to persons in the territory of another State (the United States).[26] As mentioned, although the so-called 'no harm rule' is framed as an obligation of result, it is commonly interpreted as an obligation

[22] United States Diplomatic and Consular Staff in Tehran, Judgment, *I.C.J. Reports* 1980, pp. 31-33, paras. 63-68.

[23] United States Diplomatic and Consular Staff in Tehran, *cit*., p. 35, para. 74.

[24] See Responsibilities and obligations of States with respect to activities in the Area, Advisory Opinion, 1 February 2011, *ITLOS Reports* 2011, par. 112.

[25] Emphasis added. Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion of 8 July 1996, *I.C.J. Reports* 1996, par. 29.

[26] "No State has the right to use *or permit the use* of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein." Emphasis added. Trail Smelter case (United States, Canada), 16 April 1938 and 11 March 1941, *RIIA* III, p. 1965.

of diligent conduct.[27] This means that if a State does all that is possible and reasonable to hinder the occurrence of a harm, it will be released from any responsibility even if the harm occurs.

Shifting the focus to the law of the sea, Article 139 of the Convention on the Law of the Sea offers a further example of obligations on States to *ensure* that private activities are carried out in conformity with relevant international law rules: "States Parties shall have the responsibility to ensure that activities in the Area, whether carried out by States Parties, or state enterprises or natural or juridical persons which possess the nationality of States Parties or are effectively controlled by them or their nationals, shall be carried out in conformity with this Part."[28] The Tribunal for the Law of the Sea also interprets this norm as imposing a due diligence obligation on States to ensure that nationally sponsored contractors under their control comply with the rules of the Convention concerning activities in the international seabed area.[29] This interpretation is persuasive because Article 139 of the Convention on the Law of the Sea makes it clear that a State is not responsible for damage caused by "sponsored" contractors if the State has taken "all necessary and appropriate measures to secure effective compliance" with the rules contemplated in the Convention.[30] We will see whether interpretation of Article VI OST should follow the same path.

3. The content of Article VI Outer Space Treaty

Article VI OST contains two related provisions. According to the first, States bear "international responsibility for national activities in outer space," including those carried out by "non-governmental entities," and for ensuring (in Spanish '*asegurar,*' in French '*veiller*') that such activities are carried out in conformity with the OST, which means, via Article III OST, in accordance

[27] Par. 7 of the Commentary to Article 3 of the ILC Articles on Prevention of Transboundary Harm from Hazardous Activities. In the sense that the 'no harm rule' is an obligation of conduct, see, *ex multis*, A.E. BOYLE, *State Responsibility and International Liability for Injurious Consequences of Acts Not Prohibited by International Law: A Necessary Distinction?*, *ICLQ*, 1990, vol. 39, pp. 14-15 and the literature cited therein; A. GATTINI, *International Responsibility of the State and International Responsibility of Judicial Persons for Environmental Damage: Where do we stand?* in Y. LEVASHOVA, T. LAMBOOY and I. DEKKER (Eds), Bridging the Gap between International Investment Law and the Environment, The Hague, 2015, p. 117; P. BIRNIE, A. BOYLE and C. REDGWELL, *International Law and the Environment*, Oxford, 2009, p.137; T. SCOVAZZI, *State Responsibility for Environmental Harm,* in Yearbook of International Environmental Law, 2001, pp. 49-50; J. BRUNNÉE, *Of Sense and Sensibility: Reflections on International Liability Regimes*, *ICLQ*, 2004, p. 354.

[28] Article 139 (*Responsibility to ensure compliance and liability for damage*), United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, *UNTS* vol. 1833, p. 3.

[29] On the arguments used by the Tribunal to support this thesis, see paras. 107-120 of the Advisory Opinion of 1 February 2011, Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area, *ITLOS Reports* 2011.

[30] *Ibidem*, par. 119.

with international law.[31] The second provision provides that the "appropriate State" shall authorise and continuously supervise private activities in space, even though it fails to specify what this "appropriate State" is and the requirements that should be met in order for an authorisation to be issued.

As far as the scope of application of Article VI OST is concerned, this norm literally refers to the activities of non-governmental entities "in outer space" to specify the activities for which States are responsible and which require authorisation and continued supervision by the appropriate State. However, in spite of the mention of "in outer space," it is obvious that States' responsibility starts with the launch and that the authorisation has to be delivered before the launch. Otherwise, this would lead to the absurd conclusion that the space operator should only apply for authorisation when the space activity has already reached outer space, thus depriving it of its utility. The expression 'in outer space' must therefore be interpreted as also encompassing all activities which are planned for outer space but not yet taking place in outer space. This extensive interpretation is the only reasonable one which, in accordance with Article 31, paragraph 1 of the VCLT, does not frustrate the purpose of the treaty norm. Existing national space laws confirm this extensive interpretation insofar as they require private operators to obtain authorisation before a space mission takes place. They all include launching space objects among the activities requiring authorisation.[32]

Under general international law, a State is not under a duty to supervise the activities of its nationals beyond the bounds of State territory.[33] However, it is possible to prescribe such duties to control by means of conventions. One might think of the rules contained in the Convention on the Law of the Sea concerning the protection of the marine environment, which are applicable to national ships beyond the limits of national jurisdiction[34] and, with specific regard to space activities, of Article VI OST. This norm is a result of the Cold War and represents a compromise between the Soviet Union, which aimed at banning private activities in outer space,[35] and the United States, which wanted

[31] Since Article III OST obliges State Parties to conduct space activities "in accordance with international law," the first sentence of Article VI OST has consequently the effect of requiring States to ensure that space activities for which they are responsible will conform with international law.

[32] See, for example, Art. 2 of the French law no. 2008-518 relative aux opérations spatiales of 3 June 2008 and, for the Netherlands, Section 1 (b), of the Rules Concerning Space Activities and the Establishment of a Registry of Space Objects (Space Activities Act). The text is available at: https://www.unoosa.org/oosa/en/ourwork/spacelaw/nationalspacelaw/netherlands/space_activities_actE.html

[33] I. BROWNLIE, *System of the Law of Nations. State Responsibility*, Part I, Oxford, 1983, p. 165.

[34] Articles 117, 194, 211, 216 (1) (b), 217 of the Convention on the Law of the Sea.

[35] The Soviet position at the time of the drafting of principle 5 of the Declaration of Legal Principles, which was recalled during the drafting of Article VI OST, was that all activities pertaining to the

outer space to be open to private entities. It is emblematic that the very concept of 'private entities' is rendered by using the litotic term '*non*-governmental'.

Even though the structure and rationale of Article VI OST are deeply connected to the historic context in which it was drafted,[36] the particularities of the space environment and the risks involved in its use continue to justify this special regulation today. However, during the first decades of the space era, when space activities were exclusively carried out by (two) States and were mainly military in character, the application of Article VI OST was not particularly challenging. Later, with the privatisation and commercialisation of space activities, the situation changed dramatically.

4. Traditional and divergent interpretations of Article VI Outer Space Treaty

According to the prevailing interpretation of Article VI OST, duties to authorise and supervise are primary obligations, thus entailing responsibility in cases of non-compliance by the relevant State.[37] The most important part of Article VI is nonetheless the first provision: "States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the Moon and other celestial bodies, whether such activities are carried out by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty," which should be interpreted as meaning that any act performed in space by a private individual is automatically attributed to the national State and therefore entails the latter bearing international responsibility for any violation of international rules committed by the former.[38] In other

exploration and use of outer space should be carried out solely and exclusively by States. See UN Doc. A/AC.105/L.2 and UN Doc. A/AC.105/C.2/SR.67 (21 October 1966), p. 3.

[36] W.J. JENKS, *Space Law*, London, 1965, p. 210.

[37] P. DE SENA, *Questioni in tema di responsabilità internazionale per attività spaziali*, in Rivista di diritto internazionale, 1990, p. 301; L. CONDORELLI, *La réparation des dommages catastrophiques causés par les activités spatiales*, in La réparation des dommages catastrophiques, 1990, Bruxelles, pp. 269-270.

[38] M. LACHS, *The Law of Outer Space*, Leiden, 1972, p. 122; M.G. MARCOFF, *Traité de droit international public de l'espace*, Fribourg, 1973, p. 532; L. CONDORELLI, *L'imputation à l'Etat d'un fait internationalement illicite: solutions classiques et nouvelles tendances*, in Recueil des cours, 1984 vol. VI, pp. 122-126 and *La réparation*, *op.cit*., pp. 268-270; A. KERREST, *Remarks on the Responsibility and Liability for Damages Caused by Private Activity in Outer Space*, Proceedings of the 40th Colloquium on the Law of Outer Space, 1997, pp. 138-139; B. CHENG, *Studies in International Space Law*, Oxford, 2004, p. 606; 633; M. PEDRAZZI, *Il diritto internazionale dello spazio e le sue prospettive*, Quaderni di relazioni internazionali, n. 8, 2008, p. 47, who changes his mind on the interpretation of Article VI, as proposed earlier in M. PEDRAZZI, *Danni causati da attività spaziali e responsabilità internazionale*, Milano 1996, pp. 31-32; 36-37; 131. P. De Sena argues that the direct imputation of private space activities to States is a general principle of space law, P. DE SENA, *Questioni in tema di responsabilità internazionale per attività spaziali*, in Rivista di diritto internazionale, *op.cit*., p. 299; G. CATALANO SGROSSO, *La responsabilità degli Stati per le attività svolte nello spazio extra-atmosferico*,

words, international responsibility extends to all acts and omissions by private entities which, if they had been committed by State organs, would have triggered the international responsibility of the State.[39] This norm would therefore confer a legal attribution or imputation of private space activities to States, thus derogating from the general international law rule on the attribution of wrongful acts.[40] After all, Article VI makes no difference in terms of the kind of responsibility to be applied to governmental agencies or to private entities.[41] This interpretation finds support in the wording of Article VI. States are responsible "for assuring" that space activities are in conformity with the OST, as if they had underwritten some kind of insurance policy to cover co-contracting States against the occurrence of unlawful acts by private entities. The Spanish version of the OST uses the verb 'asegurar' and points in the same direction.

The interpretation outlined has been criticised for more than one reason. First of all, the wording of Article VI OST is clear in that the legal position of non-governmental entities is distinct from that of the State, with the latter being called on to authorise and supervise private space activities and to ensure that they are carried out within the limits imposed by the OST. Therefore, to substantially assimilate private entities to State organs has been criticised as unreasonable. It would imply an admission that a State must authorise and supervise its "organs," and ensure that they comply with the OST.[42]

In the light of these criticisms, a second interpretation of Article VI OST has been proposed which holds that its provisions establish a due diligence regime. Under this interpretation, private activities in outer space do not lose

Padova, 1990, pp. 14-15; C.Q. CHRISTOL, *The Modern International Law of Outer Space*, New York, 1982, p. 105.

[39] In contrast, some authors argue that the attribution to the State even applies to civil and criminal responsibility under municipal law, in the sense that a State is internationally responsible even for civil and criminal acts by individuals. They argue that direct imputation would otherwise be deprived of any content. P. DE SENA, *Questioni in tema di responsabilità internazionale per attività spaziali*, in Rivista di diritto internazionale, 1990, p. 300; B. CHENG, *op.cit.*, pp. 607, 633-634. This position is untenable. It is one thing to say that the appropriate State is internationally responsible for national space activities but another to claim that responsibility under domestic law shall be translated to the international level as if Article VI OST were a sort of umbrella clause.

[40] L. Condorelli consistently affirms that this interpretation of Article VI OST is a "déviation" from general international law. L. CONDORELLI, *L'imputation à l'Etat d'un fait internationalement illicite: solutions classiques et nouvelles tendances*, *op.cit.*, p. 124. See *supra* par. 2.

[41] F. VON DER DUNK, *Liability versus Responsibility in Space Law: Misconception or Misconstruction?* Proceedings of the 34th Colloquium on the Law of Outer Space, 1992, pp. 366-367.

[42] According to E. Back Impallomeni, the thesis of automatic imputation implies an antinomy, because a State would be responsible both for a commission (because the private act is automatically attributed to the State) and for not having diligently authorised or supervised the space activity (*culpa in eligendo* or *in vigilando*). E. BACK IMPALLOMENI, *Spazio cosmico e corpi celesti nell'ordinamento internazionale*, Padova, 1983, pp. 127-128. In contrast, P. DE SENA, *Questioni in tema di responsabilità internazionale per attività spaziali*, in F. FRANCIONI F. POCAR (Eds.), *op.cit.*, pp. 258-260; and L. CONDORELLI, *La réparation*, *op.cit.*, p. 270.

their private character in the sense that the article merely imposes on States the aforementioned obligations to authorise and supervise private activities and to ensure that they take place in accordance with the OST. Failure to do so by either the legislative, executive or judicial branch of the State in fact involves the direct responsibility of the State. Therefore, the conduct of private persons may indicate a failure by the State to adequately perform its obligations to control and prevent. However, if the State were to demonstrate that a private entity committed an unlawful act despite it having taken all feasible measures to prevent it, this would relieve the State of its responsibility. Therefore, Article VI OST establishes obligations of conduct (*obligations de comportement*) rather than obligations to achieve results (*obligations de résultat*).[43] The French version of the OST uses the verb '*veiller à*,' thus emphasising the idea of exercising diligence even more clearly than the English verb 'ensure.' Under this interpretation, the sentence attributing to State parties the responsibility for activities carried out by non-governmental entities could be read as a descriptive introduction to the real obligations set out in the second paragraph of Article VI OST[44] or as a mere attribution of moral responsibility to State parties.[45] Alternatively, and this interpretation seems more persuasive, the term 'responsibility' could be interpreted as a synonym of 'competence' or 'entitlement,' as sometimes happens in international instruments.[46] Such an interpretation of Article VI OST would be in line with the general rules of international law on responsibility.[47] An argument supporting this interpretation could be the factual consideration that States are generally reluctant to accept international responsibility for conduct that is not directly performed by their organs or for

[43] On the connection between due diligence obligations and obligations of conduct, see ICJ, Case Concerning Pulp Mills on the River Uruguay (Argentina v. Uruguay) (Merit) [2010], *ICJ Reports* 2010, par. 187, the dictum of which is recalled in Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (Advisory Opinion of 1 February 2011) *ITLOS Reports* 2011, par. 111.

[44] "Ce texte édicte un principe général de responsabilité de caractère plutôt politique." L. PEYREFITTE, *Droit de l'espace*, Paris, 1993, pp. 140-141.

[45] M. PEDRAZZI, *Danni causati da attività spaziali e responsabilità internazionale*, *op.cit*., pp. 36-37.

[46] For example, in the language of the Antarctic Treaty System, composed of the 1959 Antarctic Treaty and related instruments, the expressions 'special responsibilities' and 'prime responsibilities' of the parties are often used to render the idea that the parties are supposed to be more competent or entitled than other States to adopt measures relating to activities in Antarctica. See, as an example, recital n. 5 of the preamble and Art. 2 par. 3 of the Convention on the Regulation of Antarctic Mineral Resource Activities.

[47] See *supra* par. 2. To comply with the 'no harm rule,' States are likewise called on to constantly monitor possible harmful effects that might occur during the conduct of private activities. Pulp Mills, *cit*., par. 197, 205. On the need to monitor the ongoing environmental risks as a continuum throughout the life of a project, see P. BIRNIE, A. BOYLE and C. REDGWELL, *International Law and the Environment*, Oxford, 2009, p. 170; L.-A. DUVIC-PAOLI, *The Prevention Principle in International Environmental Law*, Cambridge, 2018, p. 217-218.

harm arising from economic activities in general. To further support this interpretation, one could draw on the interpretation developed by the Tribunal for the Law of the Sea of Article 139 of the Convention on the Law of the Sea, which is substantially similar to Article VI OST. As outlined above, the Tribunal read this norm as imposing a due diligence obligation on States to ensure that nationally sponsored contractors under their control comply with the rules of the Convention concerning activities in the international seabed area.[48]

What often remains in the shadow of the debate is the fact that a preferential choice between an obligation of diligent conduct and an obligation of result requires as a prerequisite identification of the precise scope of the notions of 'national activities in outer space' and 'appropriate State.' Indeed, whereas Article VI OST provides specific demands in the case of participation by private entities, it does not elucidate the term 'national activity' and neither does it give a criterion for the relationship between the entity involved in space activity and the authorising State by using the neutral description "appropriate State." Moreover, Article VI OST does not explicitly state that the "appropriate" State called on to authorise and supervise a space activity is also internationally responsible for it. However, this implicit connection between the two provisions is at the core of Article VI OST. It would be absurd to deem a State appropriate to authorise and supervise a space activity without simultaneously holding it the national and therefore responsible State for that activity.[49] Starting from this necessary logical assumption, it will be first ascertained what 'national space activities' are.

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5. "National" space activities

The reference to the nationality of an activity is misleading, as an activity as such arguably cannot have any nationality. As we do not speak of the nationality of a maritime or aeronautical activity, but of the ship or aircraft with which the activity is carried out,[50] the same should apply to space activities. In short, nationality should not be attributed to space activities but to the space objects

[48] On the arguments used by the Tribunal to support this thesis, see paras. 107-120 of the Advisory Opinion of 1 February 2011, Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (*ITLOS Reports* 2011). However, this parallelism could be nothing more than a supporting argument for interpreting Article VI OST, also because, unlike Article VI OST, Article 139 of the Montego Bay Convention explicitly exempts sponsoring States that have taken "all necessary and appropriate measures to secure effective compliance" from liability for damage.

[49] We will see that this does not apply *vice versa*. A space activity can be national for more States, with only one of them being the appropriate State. See *infra* par. 6.

[50] See Article 91 (*Nationality of ships*) of the Convention on the Law of the Sea and Article 17 (*Nationality of aircraft*) of the Convention on International Civil Aviation. The first norm requires a "genuine link" between the ship and the State of the flag. The second norm simply derives nationality from registration.

with which they are carried out. However, the concept of nationality of space objects is nowhere to be found in space treaties. Even the registration of a space object, far from attributing any nationality, (merely) serves the purpose of identifying the object, as is clearly stated in the preamble to the Registration Convention.[51] Indeed, if registration attributed nationality, the requirement contemplated by the Registration Convention for the State of registry to be a launching State[52] would turn out to be inappropriate in cases of 'delivery in orbit,'[53] in which the ownership of a space object already in orbit is transferred to a State which may not be a launching State, and therefore according to the Registration Convention the State of registry. In short, the State of registry would be the national and therefore responsible State for a space activity but paradoxically without having any possibility of control over the space activity for which it is responsible.

A further rule shows that the equation State of registry = State of nationality would lead to other paradoxical consequences. Article 2, para. 3 of the Registration Convention provides that "the contents of each registry and the conditions under which it is maintained shall be determined by the State of registry concerned." If it is true, as it is, that this provision could possibly be used to leave certain space objects out of the national registry,[54] equating the State of registry with the State of nationality would entail an obvious consequence. A State could easily escape responsibility simply by avoiding the registration of the space object. These weaknesses seem to be sufficient to conclude that a path other than registration should be followed to identify the nationality of a space activity.

A combined reading of the first and second part of Article VI OST may

[51] See the preamble of the Registration Convention, recitals nos. 7, 8. In contrast, among others, G. Gal: "the question whether nationality should attach to certain criteria of fact or to the formal act of registration was decided in favour of the latter by the Space Treaty." G. GAL, *Space Law*, Budapest, 1969, p. 210, 213; G. SILVESTROV, *On the Notion of the "Appropriate" State in Article VI of the Outer Space Treaty*, Proceedings of the 34th Colloquium on the Law of Outer Space, 1991, p. 328; I. DE LUPIS FRANKOPAN, *Giurisdizione e controllo degli oggetti spaziali*, in G. CATALANO SGROSSO (Ed.), Outer Space Law, Padova, 1994, p. 184; M. PEDRAZZI, *Il diritto internazionle dello spazio e le sue prospettive*, *op.cit*., pp. 50-51; M. PEDRAZZI, *Danni causati da attività spaziali e responsabilità internazionale*, *op.cit*., p. 35. M. Pedrazzi more precisely argues that by registering an object in the national register a State undertakes responsibility and liability for it. M. PEDRAZZI, *Danni causati da attività spaziali e responsabilità internazionale*, *op.cit*., 255.

[52] Registration Convention, Articles I (c) and II. The rationale underlying this requirement is clear. If the State of registry must be a launching State, a liable State is always identifiable (under Article VII OST, launching States are liable for any damage caused by a space object). However, the OST does not contain this requirement.

[53] For a description of the 'delivery in orbit' operation, see Report on the Review of the concept of the "launching State," UN Doc A/AC.105/768, 21 January 2002, p. 17.

[54] S. MARCHISIO, *International Legal Regime on Outer Space: Liability Convention and Registration Convention*, Proceedings, United Nations/Nigeria Workshop on Space Law, 2006, p. 27.

lead to the conclusion that space activities have the nationality of the State which authorises and supervises them. However, while the focus of the first part of Article VI is on the State responsible, the second part of the article refers to the 'appropriate' State's obligations to authorise and supervise. If the State which authorises and supervises a space activity were the national and therefore responsible State, and vice versa, Article VI would not have used the different expression 'appropriate State' in the second part. Therefore, even this interpretation is to be rejected.

It is submitted that the notion "national activities in outer space" should broadly encompass all the activities taking place within a State's territorial and personal jurisdiction. Therefore, in addition to activities which are carried out from a State's territory by its nationals, it should also encompass those carried out anywhere by citizens or national legal persons, and those carried out from the State's territory even by foreigners.[55] Indeed, first of all, and in principle, a State is responsible for events occurring in its territory. This was stated by Judge Huber as Rapporteur in the *British Property in Spanish Morocco* case: "responsabilité et souveraineté territoriale se conditionnent réciproquement."[56] The importance of the territorial link, when such a link exists, between activities and a State's responsibility is so well-rooted that no doubt space activities carried out from a State's territory are included in the notion of national activities.[57] It is true that under general international law a State is not responsible for its nationals beyond the bounds of its territory.[58] However, States can undertake such responsibility by convention. This is precisely the case of Article VI OST because it explicitly states that States are responsible for national space activities even when they are carried out by private entities, without any territorial qualification.[59] A combined reading of Article VI OST and Article IX OST confirms an interpretation of the notion of "national space activities" as including activities planned by nationals, even outside the territory of the State. Indeed, in setting out the obligation of contracting States to avoid potential harmful interference, Article IX OST prescribes a duty of prior

[55] In this sense, also see M.G. MARCOFF, *op.cit.*, p. 533; F. DURANTE, *Responsabilità internazionale e attività cosmiche*, Padova, 1969, p. 48; M. PEDRAZZI, *Danni causati da attività spaziali e responsabilità internazionale*, *op.cit.*, p. 33.

[56] British Property in the Spanish Zone of Morocco, *RIIA* II, p. 636.

[57] F. Francioni emphasises that the ILC embraced a "territorial approach" when it dealt with both State responsibility for wrongful acts and liability for acts not prohibited by international law. See F. FRANCIONI, *Exporting Environmental Hazard through Multinational Enterprises: Can the State of Origin be Held Responsible?* in F. FRANCIONI and T. SCOVAZZI (eds.), International Responsibility for Environmental Harm, London, 1991, pp. 281-282. See the ILC Articles on Prevention of Transboundary Harm from Hazardous Activities (UN Doc. A/56/10), Commentary to Article 1, paras. 7, 8.

[58] I. BROWNLIE, *System of the Law of Nations. State Responsibility*, Part I, Oxford, 1983, p. 165.

[59] *Ibidem*, p. 165.

international consultations regarding a State's planned activities and also those of "its nationals." Moreover, as long as one solely relied on territorial jurisdiction, the responsibility regime would not cover private launching from a place not under the jurisdiction of any State, like the high seas. The existence of such blind spots is certainly not in line with the objective of the norm.

The General Assembly Resolution on National Space Legislation supports the broad interpretation adopted here and makes it clear that in enacting national space legislation States should cover space activities falling within their territorial and/or personal jurisdiction.[60] Existing national space laws are in line with this recommendation. Indeed, States aim to prevent the risk of exposure to responsibility, and arguably for this reason they generally include in their national space laws both space activities carried out from the national territory and those carried out anywhere else by their nationals.[61] In this way they indirectly offer an interpretation of what they consider to be the "national space activities" for which they could be responsible.[62] Being "concordant, common and consistent," national space laws could arguably be used as a means of interpreting the OST under Article 31 par. 3 (b) of the Vienna Convention on the Law of Treaties or, at least, as a supplementary means of interpretation under Article 32.[63]

In the light of the above, if a private entity performs a space activity and is strictly one-national, using its national territory for space launchings, utilising home-made equipment and having no legal relations with foreign States or entities, the solution to the problem is quite simple: the State of nationality of that private entity will be the responsible State.

The situation is much more complicated when there is a foreign element, which is quite common. The territory of a foreign State may be used for the

[60] GA Resolution 68/74, Recommendations on national legislation relevant to the peaceful exploration and use of outer space, A/RES/68/74, adopted on 11 December 2013, par. 2 [hereafter Resolution on National Space Legislation]. Also see the Sofia Guidelines for a Model Law on National Space Legislation: Resolution No 6/2012, Space Law, 75th Conference of the International Law Association, Sofia, 26 to 30 August 2012, Article 1 (*Scope of Application*).

[61] See Section 70104 (*Restrictions on launches, operations, and reentries*) of the US Code, Title 49; Section 2 of the Swedish Act on Space Activities (1982:963), available at https://www.unoosa.org/oosa/en/ourwork/spacelaw/nationalspacelaw/sweden/act_on_space_activities_1982E.html; Art. 2 of the French Loi no. 2008-518 of June 2008 relative aux opérations spatiales; Art. 1 of the Austrian Federal Law on the Authorisation of Space Activities and the Establishment of a National Registry (Bundesgesetz über die Genehmigung von Weltraumaktivitäten und die Einrichtung eines Weltraumregisters) [Weltraumgesetz], BGBl. I Nr. 132/2011. But see *infra* on this point.

[62] Since national space laws need to cover subjects and events outside the territory of the State, they are by default extraterritorial. For a general discussion of this issue, see A. BIANCHI, *L'applicazione extraterritoriale dei controlli all'esportazione*, Padua, 1995, pp. 25-26.

[63] ILC, Draft Conclusions on subsequent agreements and subsequent practice in relation to the interpretation of treaties, 2018, Conclusion 9 (*Weight of subsequent agreements and subsequent practice as a means of interpretation*), and Commentary, especially par. 11.

launch; the activities may be carried out by partnerships formed by non-governmental entities from more than one country. In these cases, the interpretation proposed here opens the way to the possible coexistence of several "national" States arguably responsible for the same space activity.[64] If this is the case, there is a further question to answer. It is necessary to identify which State is the "appropriate" one to authorise and supervise the space activities of non-governmental entities when there is a plurality of States involved.

6. The "appropriate State"

Having ascertained that a space activity can be national for more than one State, identification of the appropriate State can follow two alternative paths of reasoning. One could argue that all the States involved are responsible and "appropriate," and as such called on to authorise and supervise their national activity.[65] This interpretation would arguably ensure robust deterrence, but nonetheless is not persuasive. The prospect of simultaneously being subject to the authorisation and control of several States, possibly with different regulations and standards, can be more than daunting to non-governmental entities that wish to engage in space activities. It would be practically difficult and almost impossible to manage.[66] However, the reasons for rejecting several appropriate States are not just practical but also legal. First of all, an argument seems to be offered by Article 14 par. 1 of the Moon Agreement,[67] which reads: "States Parties shall ensure that non-governmental entities under their jurisdiction shall engage in activities on the Moon only under the authority and continuing supervision of the appropriate State Party."[68] This Article implicitly

[64] In this sense, also see I.A. CSABAFI, *The Concept of State Jurisdiction in International Space Law*, The Hague, 1971, p. 122.

[65] B. CHENG, *op.cit.*, p. 660 argues that there may be several appropriate States because the burden of supervision and control could otherwise easily be evaded by resorting to flags of convenience or "responsibility havens." According to V.S. Vereshchetin, the appropriate State includes both the State the nationality of which the entity has and the State or States on the territory of which the activities are done. Cf. V.S. VERESHCHETIN, *Space Activities of 'Nongovernmental Entities': Issues of International and Domestic Law*, Proceedings of the 26th Colloquium on the Law of Outer Space, 1983, p. 263. See also G. SILVESTROV, *On the Notion of the "Appropriate" State in Article VI of the Outer Space Treaty*, Proceedings of the 34th Colloquium on the Law of Outer Space, 1991 (according to the author, "several 'appropriate' States can coexist at the 'launching stage'" while at the operation stage, i.e. in orbit, there should be only one appropriate State, p. 329); and A. KERREST, *Le rattachement aux Etats des activités privées dans l'espace*, Annals of air and space law, 1997, p. 120.

[66] See the Report on the Review of the concept of the "launching State," *op.cit.*, p. 20; GA Resolution on National Space Legislation, *op.cit.*, par. 2.

[67] Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (adopted by the UN General Assembly on 5 December 1979 (A/RES/34/68), opened for signature on 18 December 1979 and entered into force on 11 July 1984) 1363 UNTS 3 [hereafter Moon Agreement].

[68] The Moon Agreement can hardly be qualified as "subsequent practice" in the application of the Outer Space Treaty under Article 31 par. 3, subsection b VCLT. Indeed, Article 31 par. 3, subsection

but unequivocally assumes that the State called on to authorise and supervise a space activity can be different from the State under the jurisdiction of which the non-governmental entities involved fall. Therefore, a space activity being national for one State does not automatically imply that it is also the appropriate State to authorise and supervise the activity. After all, if the aim were to impose a duty on a State to authorise its nationals, the article would have mentioned it expressly, in the same way as Article IX refers to "its nationals." On the contrary, according to Article VI, it is the space activity itself that needs to be authorised. The norm does not require States to authorise non-governmental entities under their jurisdiction to take part in a space activity, and obviously the same space activity cannot be divided into parts for submission for different authorisations and supervisions.

After all, the singular form used in Article VI implies that only one State will (and is entitled to) authorise and supervise a space activity. Moreover, what is now designated the "appropriate State" in Article VI was described as "the State concerned" in the corresponding principle in the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space.[69] The word 'appropriate' has a different and narrower ordinary meaning than 'concerned'. If the drafters of the Outer Space Treaty really wanted to keep the same meaning they would not have changed the word.

The UN General Assembly Resolution on National Space Legislation seems to adopt the criterion of effective jurisdiction or control to identify the 'appropriate State' by stating that each State "should ascertain national jurisdiction over space activities carried out from territory under its jurisdiction and/or control." The resolution also specifies that, regarding activities carried out from anywhere else by its nationals, each State should consider refraining from making duplicative requirements and avoid unnecessary burdens "if another

b VCLT requires that "subsequent practice" in the application of the treaty establishes the agreement "of the parties" regarding its interpretation. Although both the Outer Space Treaty and the Moon Agreement were adopted by consensus by the same bodies (the UN Committee on the Peaceful Uses of Outer Space, its Legal Subcommittee and the UN General Assembly), the discrepancy between the number of States that ultimately ratified the instruments severely limits the Moon Agreement's direct legal relevance for interpreting the OST. However, the adoption by consensus of both the OST and the Moon Agreement by the same organs, their shared subject matter and their copious links with each other through express references and verbatim reproduction of key provisions provides fodder for the argument that the Moon Agreement could be used as a supplementary means of interpretation under Article 32 VCLT. It is worth noting that the preamble to the Moon Agreement not only 'recalls' the Outer Space Treaty and its three predecessors but explicitly 'takes into account' "the need to define and develop the provisions of these international instruments in relation to the Moon and other celestial bodies, having regard to further progress in the exploration and use of outer space."

[69] Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, *op.cit.*, Principle 5.

State is exercising jurisdiction."[70] The ILC Draft Articles on Prevention of Transboundary Harm from Hazardous Activities follow the same line. The State of origin, which has the obligation to take all appropriate preventative measures and to authorise the hazardous activity, is identified as the State which has the control or jurisdiction over the activity, especially in cases without a territorial link.[71]

National laws likewise prove that the appropriate State is the State which exercises effective jurisdiction over a space activity.[72] For instance, the United States exempts citizens carrying out a space activity from a place "outside the United States and outside the territory of a foreign country" from needing a licence as long as another State has jurisdiction over the space activity and an agreement is concluded between them.[73] The same applies if a space activity is carried out from a foreign country which has jurisdiction over the activity.[74] Likewise, Germany and the United Kingdom do not require a licence to be issued by their authorities if a specific agreement is concluded with another State involved in a specific space activity.[75]

In sum, a space activity can be national for several States with all of them being responsible States but only one being the appropriate State. The States concerned are the national States for the space activity, and as such they undertake responsibility for it. Among them, the appropriate State is the only State which is called on to authorise and supervise a private space activity under Article VI OST.[76] It is certainly a State for which a space activity is national

[70] GA Resolution on National Space Legislation, *op.cit*., par. 2.

[71] The ILC Articles on Prevention of Transboundary Harm from Hazardous Activities (UN Doc. A/56/10), Commentary to Article 1 (*Scope*), par. 10; Articles 3 (*Prevention*), 6 (*Authorization*).

[72] In one of my early writings, I argued that the appropriate State should be identified through a test based on an assessment of the material connection between a space activity and the States concerned, and it should therefore be the State which enjoys the most meaningful link with the space activity. D. ZANNONI, *Conflict and Conciliation of National Space Laws*, Annals of Air and Space Law, 2013, p. 364. For the use of this test as a general rule to apply in cases of conflict over jurisdiction, see F.A. MANN, *Studies in International Law*, Oxford, 1973, pp. 36-39; A. BIANCHI, *op.cit*., p. 445, argues that a State lawfully exercises its jurisdiction over an activity insofar as it has a "collegamento effettivo […], autentico e sufficientemente significativo" [an effective, genuine and sufficiently meaningful connection] with the activity. According to Bianchi, this is the common denominator among the theories on international jurisdiction (*Ibidem*, pp. 445-447). If two States both have a meaningful connection with an activity, it will then be necessary to identify the prevailing connection. Effective control, which means capacity to enforce, is an important criterion to employ to this end. For more, see *ibidem*, pp. 460-463.

[73] US Code, Title 49, Section 70104 (*Restrictions on launches, operations and reentries*), par. 3

[74] *Ibidem*, reading *ex adverso* par. 4. On this point, see further *infra.*

[75] Gesetz zum Schutz vor Gefährdung der Sicherheit der Bundesrepublik Deutschland durch das Verbreiten von hochwertigen Erdfernerkundungsdaten, vom 23. November 2007 (BGBl. I S. 2590), section 1 par. 2; Outer Space Act 1986 (UK), c. 38, Art. 3 par. 2 (b).

[76] "La catalysation d'obligations ultérieures de tenir un comportement spécifique, souvent de nature procédurale, ou d'atteindre un résultat déterminé, implique que la violation, et donc la

but this relationship is not necessarily reciprocal, as a State can be national for a space activity without being the appropriate State.

7. The plurality of responsible States

The law on responsibility in cases of collective conduct remains relatively undeveloped and practice is overall scarcer than in the traditional areas of State intercourse.[77] This is due in part at least to the individualistic environment in which international law is cast, the traditional bilateral diplomacy when responsibility claims are formulated and presented, the state of flux and the uncertainty of many legal concepts dealing with collective responsibility. Moreover, because of the frequent jurisdictional and procedural obstacles to bringing a claim against multiple States, whether in national or international forums, it is rare for cases to be brought against multiple respondents.

Article 47 of the ILC Articles on State Responsibility regulates the case of a plurality of responsible States and is cast in a dispositive mode: "where several States are responsible for the same internationally wrongful act, the responsibility of each State may be invoked in relation to that act." It is necessary here to grapple with establishing the extent of each of the involved States' contributions to the wrongful act. In this respect, the position under international law is straightforward. The responsibility of each responsible State is to be determined individually on the basis of its own conduct and with reference to its international obligations (the so-called principle of independent responsibility).[78] By the same token, a State does not assume responsibility for the deeds of the other 'participating' States. In this area – as in many others – international law remains permeated with individualistic principles.

The ILC Articles offer little guidance on the matter of contribution as an issue of causation. They are silent on how to establish a causal link between the conduct of each State and the wrongful act causing the injury, as distinct from the causal link between the wrongful act and the injury.[79] In particular, neither Article 47 nor its Commentary explicitly addresses matters of marginal contribution. On the contrary, the Commentary to Article 16, dealing with aid or assistance in the commission of an internationally wrongful act, specifically provides that assistance "may have been only an incidental factor in the

responsabilité, est indépendante de cet élément [le préjudice] et repose simplement sur le fait que les comportements spécifiques ne sont pas réalisés," S. FORLATI, *L'objet des différentes obligations primaires de diligence: prévention, cessation, répression… ?*, in S. CASSELLA (Ed.), *Le standard de due diligence et la responsabilité internationale*, Paris, 2018, p. 63.

[77] J. CRAWFORD, *State Responsibility*, *op.cit.*, p. 326; R. KOLB, *op.cit.*, p. 215.

[78] See also J. CRAWFORD, *op.cit.*, pp. 333-334.

[79] On which, see Commentary to Article 31 (*Reparation*) of the ILC Draft Articles on State Responsibility, par. 10.

commission of the primary act, and may have contributed only to a minor degree, if at all, to the injury suffered." In these cases, the assisting State's responsibility is limited to its degree of contribution/enablement. It is reasonable to assume that this principle should also apply in the context of Article 47.

The distinction between the appropriate State and the concerned one has a specific relevance here. As it is the appropriate State, the State which exercises effective jurisdiction or control over a space activity will be primarily responsible for it. At the same time, this does not mean that the concerned States other than the appropriate State can avoid their responsibility under Article VI simply by alleging that some other State Party is the appropriate one to provide authorisation and continuing supervision.[80] International practice is not yet rich, but it shows that the concerned States generally verify, in cooperation with the appropriate State, that their international obligations, including those contemplated by the OST, will be complied with. German law (Satellitendatensicherheitsgesetz, SatDSiG) requires that a treaty to be concluded with the other States involved in a space activity specifically declares the comparability of the rules contained in the SatDSiG and of the interests protected therein with those in the space legislation of the other States.[81] The United Kingdom similarly requires that the arrangements with the other States ensure compliance with the international obligations of the United Kingdom.[82] In short, a space activity does not need to obtain authorisation from Germany or the United Kingdom, even if it falls within the scope of application of their space laws, where the legislation of the other (appropriate) States assures at least equivalent levels of guarantees and the equivalence is declared and safeguarded in a treaty. The content of the agreement to be concluded under Section 70104 of the US Code between the United States and the foreign State with jurisdiction over a space activity is arguably similar.[83] France likewise provides an exemption from compliance checks if a national carries out a space activity from the territory of a foreign State on the condition that the national legislation and practice of that State, or its international commitments, include sufficient guarantees regarding the safety of persons and property, the protection of public health and the environment, and liability matters.[84]

Since the concerned States are not the appropriate State, they do not have

[80] "Responsibility is not diminished or reduced by the fact that one or more other States are also responsible for the same act." Commentary to Article 47 of the ILC Draft Articles on State Responsibility, par. 1.

[81] Gesetz zum Schutz vor Gefährdung der Sicherheit der Bundesrepublik Deutschland durch das Verbreiten von hochwertigen Erdfernerkundungsdaten, vom 23 November 2007 (BGBl. I S. 2590), section 1 par. 2.

[82] Outer Space Act 1986 (UK), c. 38, Art. 3 par. 2 (b).

[83] US Code, Title 49, Section 70104, paras. 3, 4.

[84] Loi no. 2008-518 of 3 June 2008 relative aux opérations spatiales, Art. 4 par. 4.

the right/duty to authorise and supervise the space activity and cannot be held responsible for it. However, they could be responsible for having left the entire space activity to an appropriate State which is not able to fulfil its duties under Article VI, for instance because it lacks the appropriate expertise, personnel or knowledge.[85] Through the distinction between the appropriate State and concerned States it is possible to preserve the symmetry between effective control and responsibility for wrongful failure to prevent private parties from injuring other States.[86] After all, it would be unfair to hold that all responsible States, even those without any effective control over a space activity, should carry the same 'share' of responsibility as the appropriate State. The interpretation adopted here also has beneficial effects at the practical level. First, regarding responsibility it mirrors the liability regime set forth in the Liability Convention, which contemplates a system of contribution based on comparative fault.[87] Second, it mitigates the side effects which a blanket multiple attribution would inevitably trigger to the detriment of international cooperation. Indeed, in the case of blanket multiple attribution a State would hesitate to allow its private entities to participate in a cooperative venture for fear of being held responsible for an activity which it has no power to control.

8. An obligation of result or an obligation of conduct?

The answer to whether Article VI OST first paragraph entails an obligation of result or an obligation of conduct is already contained in what we have outlined so far. To find a balance, it seems that Article VI OST paragraph 1 is to be interpreted as establishing an obligation of diligent conduct characterised by a variable level of due diligence depending on the capacity of the State to "effectively influence" a space activity, where the required due diligence reaches the limit for the appropriate State.[88] Specific rules offer the standards of due diligence against which a State's conduct should be assessed.[89] One might think

[85] In similar terms, for cases in which multiple States participate in a cooperative venture, see T. DANNENBAUM, *Public Power and Preventive Responsibility. Attributing the Wrongs of International Joint Ventures*, in A. NOLLKAEMPER and D. JACOBS (Eds.), Distribution of Responsibilities in International Law, Cambridge, 2015, pp. 192-226, in particular p. 224.

[86] See the Advisory Opinion "Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970) (Advisory Opinion, *I.C.J. Reports* 1971, p. 16, par. 118. For the use of the criterion of control "most relevant" to prevent wrongdoing, see also T. DANNENBAUM, *op.cit.*, pp. 192-226.

[87] Liability Convention, Article VI, par. 2.

[88] For a list of other useful parameters to assess the required level of due diligence, see the Application of the Convention on the Prevention and Punishment of the Crime of Genocide (*Bosnia and Herzegovina v. Serbia and Montenegro*), Judgment, *I.C.J. Reports* 2007, p. 43, par. 430.

[89] P.-M. DUPUY, *Soft Law and the International Law of the Environment*, in Michigan Journal of International Law, 1991, vol. 12, issue 2, p. 434.

of the UNCOPUOS Guidelines on Space Debris Mitigation[90] and of other sets of guidelines and codes of conduct which fill the general principles laid down by the Outer Space Treaty with content. These interact with the binding rules of Article VI OST in the sense that, although not compulsory in themselves, they complement and fill the general obligations contained therein with content. Being adopted by consensus both by the UNCOPUOS and the UN General Assembly, the UNCOPUOS Guidelines encompass a common understanding of all the parties to the OST as to its proper interpretation. They can be considered 'subsequent practice' of the State parties according to Article 31 paragraph 3 of the Vienna Convention.

The nature of the obligation to ensure that national private activities in outer space are carried out in conformity with international law is therefore no different from that of the obligation to prevent transboundary harm, which is certainly an obligation of diligent conduct. To ascertain international responsibility for an environmental harm caused by a private entity, once it has been determined that a private entity has failed to exercise due diligence in carrying out an activity, it still needs to be determined whether a State organ omitted to exercise due diligence in controlling the private entity.[91] This so-called double due diligence test also applies to ascertaining responsibility for private space activities.

Precisely because the obligation at stake is an obligation of diligent conduct, if a State does all that is possible and reasonable to avoid a wrongful act being committed by private persons – in particular through the establishment of appropriate regulation and monitoring mechanisms – it will be released from any responsibility even if a wrongful act is committed. This is of course without prejudice to liability for damages eventually caused to other States, if the requirements laid down in Article VII OST and, if applicable, in the Liability Convention, are met[92].

On the other hand, if the appropriate State does not diligently prevent a wrongful act from being committed and damage nonetheless does not occur, that State is under no obligation to pay compensation. However, the State does incur other consequences of the internationally wrongful act, such as the obligation to cease the wrongful conduct (Article 30(a) of the ILC Articles on State Responsibility), to offer appropriate assurances and guarantees of non-repetition (Article 30(b) of the ILC Articles on State Responsibility), to re-establish

[90] Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space (2007 UNCOPUOS Report, A/62/20, paras. 118-119 and Annex.

[91] For more, see T. SCOVAZZI, *State Responsibility for Environmental Harm,* in Yearbook of International Environmental Law, 2001, pp. 55-56.

[92] On the liability regime for private space activities, see D. ZANNONI, *The Liability Regime for Private Activities in Outer Space: Is There a Normative Gap?*, Archiv des Völkerrechts, 2021, pp. 1-26.

the situation that existed before the wrongful act was committed (Article 35 of the ILC Articles on State Responsibility) and to give satisfaction in the form of acknowledgment of the breach, an expression of regret, a formal apology or in other appropriate ways (Article 37 of the ILC Articles on State Responsibility).

9. Final remarks

The co-existence of two vague notions in Article VI OST – national space activities and appropriate State – with no explicit connection between them entails a risk of circular reasoning. We have seen that the only way to get out of the deadlock is to make one notion dependent on the other. For this reason, this paper has qualified the appropriate State as the State or one of the States for which a space activity is national. It has been pointed out that two different interpretations of Article VI OST are traditionally offered: the automatic attribution of private space activities to the national State and that Article VI OST establishes a due diligence regime.

The first option would offer the maximum safeguard against infringements of international law, although it would open the way to double (if not multiple) authorisations and supervisions, and to double (if not multiple) imputations and responsibilities. In fact, such a blanket multiple attribution would pose a severe threat to international cooperation. A State would hesitate to allow its private entities to participate in a cooperative venture for fear of being held responsible for an activity which it has no power to control. If the second option is adopted, this risk is certainly averted, although at the cost of creating blind spots in the responsibility regime. This paper has followed the second way, but with a variation. The concept of national space activities is broadly interpreted to encompass space activities carried out from a State's territory and also those carried out from anywhere else by a State's nationals. Therefore, there can be more than one national and therefore responsible States for the same space activity. However, the degree of due diligence is different depending on whether the State is appropriate or merely concerned in relation to the space activity.

Concerned States do not have a duty or a right to authorise and supervise a space activity when another State – the appropriate State – has effective jurisdiction over the activity. They might nonetheless be responsible if they left the entire activity to a State which does not live up to its duties. Therefore, they will need to ensure that the appropriate State will fulfil its duties in such a way as to avert any risk of their international responsibility being triggered. In concrete terms, each concerned State should prevent its national private entities from taking part in a space activity which does not comply with international standards and without appropriate guarantees. This supplementary vigilance would be particularly useful in preventing wrongful acts from being committed

in outer space. The appropriate State will instead be in the front line and will have to take the appropriate measures, including of course authorisation and supervision, to prevent a wrongful act from being committed in the course of a space activity. Therefore, similarly to the provisions regulating liability for damage in Article VII OST, there may be cases of multiple responsibility even under Article VI OST. For this very reason, States should enact domestic legislation implementing the procedure for authorisation and supervision under Article VI OST[93] and should specifically regulate the situation in which other States are involved in the same space activity, either directly or through their private entities, with the purpose of coordinating overlapping claims to jurisdiction. Under the interpretation proposed here, Article VI OST, in combination with Article III OST, becomes a veritable cornerstone in the defence of the legal order in outer space. It prevents the state of weightlessness from turning out to shake off, in addition to terrestrial gravitation, also the rules of international law.

[93] In this sense, see GA Resolution on Application of the concept of the 'launching State', GA Res 59/115, 2005.