ADEQUACY OF THE CURRENT LEGAL AND REGULATORY FRAMEWORK RELATING TO THE EXTRACTION AND APPROPRIATION OF NATURAL RESOURCES IN OUTER SPACE[=]

by

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SYNOPSIS

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I. Introduction

Dreams about property rights on the Moon are at least as old as the advent of the space age. More recently, these dreams became claims to property rights for land on the Moon which had been sold to customers in the United States and in Europe.[1] In this article, an attempt will be made to assess the current legal situation with regard to various property rights in outer space and on celestial bodies from perspectives of the legal regime established by the Outer Space Treaty of 1967.[2] Some of the provisions of the International Moon Agreement will necessarily be invoked because this Agreement represents State practice that is important as a means of interpretation under Article 31 paragraph 3 of the Vienna Convention on the Law of Treaties.[3]

The legal situation under the regime of the Outer Space Treaty is rather complicated. This may have a lot to do with the fact that, when this Treaty was drafted almost 40 years ago, one did not think of specific uses - especially by private users. This article, therefore, analyses the legal regime under the Outer Space Treaty by asking what kind of uses are allowed and where the limits to these uses are.

II. Property Rights in Outer Space, on the Moon and Other Celestial Bodies under the Outer Space Treaty

A. The Freedom of Exploration and Use (Article I paragraph 2 of the Outer Space Treaty)

The Outer Space Treaty (OST) in Article I paragraph 2 allows all who are covered by this provision the free exploration and use of outer space, the Moon and other celestial bodies. Only States parties to the Treaty are explicitly named and no qualification with regard to "use" is made. It is, thus, debatable whether the extraction of natural resources by States, private natural and juridical persons, or international intergovernmental organizations may, in principle, be covered by the freedom of exploration and use. In order to clarify this issue, this article will first discuss the precise meaning of the term "use" and then ask

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[1] See, *e.g.*, the cases of Dennis Hope, online: Lunar Registry <http://www.lunarregistry.com/> (date accessed: 15 August 2006), and of Gregory W. Nemitz, online: Eros Project <http://www.erosproject.com/> (date accessed: 15 August 2006). An account of the various organizations selling outer space deeds is given, *e.g.*, by V. Pop, "The Men Who Sold the Moon: Science Fiction or Legal Nonsense?" (2001) 17 Space Policy 195. See, in this context, the Statement by the Board of Directors of the International Institute of Space Law (IISL) on Claims to Property Rights Regarding the Moon and Other Celestial Bodies, text available online: International Institute of Space Law website <http://www.iafastro-iisl.com/additional%20pages/Statement_Moon.htm> (date accessed: 15 August 2006).

[2] *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, 27 January 1967, 610 U.N.T.S. 205, 18 U.S.T. 2410, T.I.A.S. No. 6347, 6 I.L.M. 386 [hereinafter *Outer Space Treaty* or *OST*].

[3] *Vienna Convention on the Law of Treaties*, 23 May 1969, 1155 U.N.T.S. 331 [hereinafter *Vienna Convention* or *VLCT*]. Regarding the interpretation of treaties according to the VCLT, see S. Hobe and O. Kimminich, *Einführung in das Völkerrecht* [*Introduction to Public International Law*], 8th ed. (A. Francke, 2004) 216 *ff.*

whether solely States as particularly mentioned in Article I paragraph 2 of the OST are entitled to use outer space.

Article I paragraph 2 of the OST specifically refers to the exploration and use of outer space which is free for all States. Here, "exploration" means an activity for scientific investigation and discovery.[4] It is questionable, however, whether the term "use" only denotes the use for exploration purposes or whether it also includes commercial uses of outer space.[5]

According to Article 31 of the Vienna Convention, a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose. The wording of Article I paragraph 2 of the OST is not unambiguous, though. What can be seen from Article I paragraph 2 of the OST is that the phrase "exploration and use" is employed, rather than only the word "exploration".[6] This may indicate that "use" has a wider meaning than exploration.[7] State practice following the entry into force of the Outer Space Treaty supports this perception.[8] But also with regard to subsequent agreements it has been argued that especially the UN Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of all States, Taking into Particular Account the Needs of Developing Countries of 1996[9] confirms that "use" may include commercial use.[10]

As a supplementary means of interpretation, the preparatory work of the treaty and the circumstances of its conclusion may be taken into account.[11] Also from the *travaux préparatoires* of the Outer Space Treaty it seems that the drafters did not intend to exclude commercial activities from the application of the Treaty. This can, *e.g.*, be seen from the reference to communication satellites by the Soviet delegate and his clear vision of direct television broadcast from satellite, which he did not exclude from the applicability of the foreseen Treaty.[12] The very fact that

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[4] *Van Bogaert, Aspects of Space Law* (Kluwer, 1986) at 41.

[5] For an examination of the term see K.-H. Böckstiegel, "Die Nutzung des Weltraums" ["The Commercial Use of Outer Space"] in: K.-H. Böckstiegel (ed.), *Handbuch des Weltraumrechts* [*Handbook of Space Law*] (Cologne, 1991)265 at 266 *et seq.*; W. Dettmering, *Die Rechtsstellung von Menschen, Stationen und Niederlassungen auf Himmelskörpern* [*The Legal Status of Human Beings, Stations and Installations on Celestial Bodies*] (Würzburg, Univ. Diss., 1971) at 164.

[6] Dettmering, *ibid.* at 166.

[7] *Ibid.*

[8] *Cf.* C.Q. Christol, *The Modern International Law of Outer Space* (New York: Pergamon Press, 1982) at 41.

[9] UNGA Res. 51/122, of 13 December 1996; XXI-II An. Air & Sp. L. (2006) at 556; 46 *ZLW* (1997) at 236 [hereinafter Space Benefits Declaration].

[10] P.P.C. Haanappel, "Comments on the Discussion Paper addressing "Adequacy of the Current Legal and Regulatory Framework Relating to the Extraction and Appropriation of Natural Resources of the Moon" (Montreal, Workshop on Policy and Law Relating to Outer Space Resources, 29 June 2006).

[11] *Vienna Convention, supra* note 3, art. 32.

[12] UN doc. A/AC.105/C.2/SR.58.

commercial activities were not meant to be excluded from the Treaty's application was also reiterated by the United States in 1977, in response of the Bogotá Declaration.[13] Moreover, even if commercial use is not explicitly mentioned in Article I paragraph 2 of the OST, its absence from the wording of the Treaty could be interpreted as permitting such use within the limits of the Outer Space Treaty.[14]

After all, there is strong evidence supporting the view that the freedom of exploration and use of outer space embraces the use for commercial purposes. This opinion is shared by a majority of authors.[15]

Furthermore, it may be asked whether the "use" of outer space might also encompass the extraction of natural resources - *e.g.* stones from the Moon, or dust - for commercial purposes as a certain kind of commercial use. Some argue that such activities would not come under the freedom of exploration and use as laid down in Article I paragraph 2 of the OST since this would amount to "exploitation". Such exploitation would, however, not be included in the wording of Article I paragraph 2 of the OST.[16] In this respect, it could be brought forward that the inclusion of "exploitation" in the term "use" does not seem logical against the background that exploration is mentioned separately.[17] Again, the wording of Article I paragraph 2 of the OST is not very clear on this issue.

Interestingly, however, UN GA Res. 1348 (XIII) of 1958 establishing the *ad hoc* Committee on the Peaceful Uses of Outer Space had contained the expression "exploration and exploitation" of outer space.[18] The same terms were employed in UN GA Res. 1472 (XIV) of 1959 establishing the Committee on the Peaceful Uses of Outer Space,[19]

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[13] Press Release USUN-18 (77) (7 April 1977) in John A. Boyd (ed.), *Digest of US Practice in International Law* (Washington, DC: Office of the Legal Adviser, Department of State, 1977) at 661.

[14] *OST*, *supra* note 2, arts. II and I para.1. *Cf.* K.-H. Böckstiegel, "Die kommerzielle Nutzung des Weltraums" in K.-H. Böckstiegel (ed.), *Handbuch des Weltraumrechts* [*Handbook of Space Law*] (Cologne, 1991) 279.

[15] See e.g. K.-H. Böckstiegel, "Legal Implications of Commercial Space Activities" in *24th Coll. IISL* (Institute of International Space Law, 1981) 1; O.F. Brital, "Survey from Space of Earth Resources" in *13th Coll. IISL* (Institute of International Space Law, 1970) 197 at 198; N.M. Matte (ed.), *Space Activities and Emerging International Law* (Montreal: McGill Centre for Research in Air and Space Law, 1984) at 273; R. Wolfrum, "Rechtliche Ordnung des Weltraums" ["The Legal Regime of Outer Space"] in K. Kaiser/S. v. Welck, *Weltraum und internationale Politik* [*Outer Space and International Politics*] (München : Oldenbourg, 1987) 241 at 243; R. Wolfrum, "Geostationäre Umlaufbahn" ["Geostationary Orbit"] in K.-H. Böckstiegel (ed.), *Handbuch des Weltraumrechts* [*Handbook of Space Law*] (Cologne, 1991) 351 at 365.

[16] *Cf. e.g.*, V. Kopal, "Comments on the Issue 'Adequacy of the Current Legal and Regulatory Framework Relating to the Extraction and Appropriation of Natural Resources of the Moon'" (Montreal, Workshop on Policy and Law Relating to Outer Space Resources, 29 June 2006).

[17] Haanappel, *supra* note 10.

[18] UN GA Res. 1348 (XIII), "Question of the peaceful use of outer space" of 13 December 1958: "[...] Desiring to promote energetically the fullest exploration and exploitation of outer space for the benefit of mankind [...]".

[19] UN GA Res. 1472 (XIV), "International co-operation in the peaceful uses of outer space" of 12 December 1959: "[...] Recognizing the great importance of international cooperation in the exploration and exploitation of outer space for peaceful purposes [...]".

while UN GA Res. 1721 (XVI) of 1961,[20] preceding the Outer Space Treaty, substituted the term "exploitation" with the word "use". This could be regarded as an extension of the former expression. "Use", then, would have to be considered as including "exploitation". A hint towards such interpretation of the term "use" is also given by the *ad hoc* Committee's Report of 1959, which had foreseen the prospect of human settlement with the clear implication that this would require exploitative activities.[21] Even though there had been some disagreement concerning the precise meaning of the word "use" in the negotiating process of the Outer Space Treaty, apparently most of the delegates in the drafting process shared the view of the French representative that use also encompasses exploitation.[22] Moreover, subsequent State practice suggests that the term "use" includes the exploitation of resources of the space environment.[23] Thus, the exploitation of outer space, including the Moon and other celestial bodies - at least by States - is included in the freedom of use.[24]

Yet, due to the fact that Article I paragraph 2 of the OST does not refer explicitly to natural resources, it is problematic whether the extraction of natural resources can be regarded as an exploitation of "outer space, the Moon and other celestial bodies" at all. Nonetheless, there are several reasons supporting the general availability of such resources: for once, the thinking and conclusions of the negotiators of the Outer Space Treaty was undoubtedly affected by the *res communis* principle, which allows for wide-ranging and common opportunities for the exploration, exploitation and use of the area and its resources.[25] At the same time, it can be seen from Article II of the OST that the *res nullius* principle[26] is rejected. Moreover, international practice has obviously gone forward on the basis of the *res communis* principle.[27] Another

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[20] UN GA Res. 1721 (XIV), "International co-operation in the peaceful uses of outer space" of 20 December 1961: "[...] (b) Outer space and celestial bodies are free for exploration and use by all States [...]".

[21] UN Doc. A/4141, Part III, paras. 30, 31.

[22] UN Doc. A/AC.105/C.2/SR.63 at 8, and A/AC.105/C.2/SR.69 at 5; P.G. Dembling/D.M. Arons, "The Evolution of the Outer Space Treaty" (1967) 33 JALC 419 at 433; P.G. Dembling, "Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies" in N. Jasentuliyana and R. Lee (eds.), *Manual on Space Law*, Vol. I (Dobbs Ferry: Oceana Publications, 1979) 1 at 11.

[23] C.Q. Christol, *The Modern International Law of Outer Space* (Pergamon Press, New York, 1982) at 40.

[24] This view is shared by a majority of authors. See, for instance, S. Bhatt, "Legal Controls of the Exploration and Use of the Moon and Celestial Bodies" (1968) 8 Indian J. Int'l L. 33 at 42; A. Bueckling, *Der Weltraumvertrag [The Outer Space Treaty]* (Köln : C. Heymann, 1980) at 41; C.Q. Christol, "Article 2 of the Principles Treaty Revisited" (1984) IX Ann. Air & Sp. L. 217 at 220; Dettmering, *supra* note 5 at 166; W. Jenks, "Property in Moon Samples and Things Left upon the Moon" in *Proc. 11th IISL Coll.* (Institute of International Space Law, 1969) 148; K.U. Pritzsche, *Natürliche Ressourcen im Weltraum [Natural Resources in Outer Space]* (Frankfurt am Main: Lang, 1989) 37 *ff.*; S.M. Williams, "Utilization of Meteorites and Celestial Bodies" in *12th Coll. IISL* (Institute of International Space Law, 1969) 179 at 183.

[25] Christol, *supra* note 23 at 220-21.

[26] For an analysis of *res communis* and *res nullius*, *cf.* A. Kerrest, "Outer Space: *res communis*, common heritage or common province of mankind?", Notes for a lecture in Nice, 2001 ECSL Summer Course, text available online: Université de Bretagne Occidentale <http://fraise.univ-brest.fr/~kerrest/IDEI/Nice-appropriation.pdf> (date accessed: 15 August 2006).

[27] Christol, *supra* note 23 at 221.

argument may be drawn from the fact that Article II of the OST uses the same expression of "outer space, the moon and other celestial bodies": if natural resources were not included in this phrase, an application of the prohibition contained in Article II OST to the appropriation of natural resources would be redundant. For these reasons, the extraction of natural resources for commercial purposes by States in principle must be allowed by Article I paragraph 2 of the OST.[28]

It is questionable, then, whether the same applies to respective activities by non-governmental entities and international intergovernmental organizations. According to Article VI, sentences 1 and 2 of the OST, States also bear international responsibility for national activities by non-governmental entities in outer space. From this provision it is commonly concluded that the freedoms contained in the Outer Space Treaty also apply to non-governmental entities.[29] Pursuant to Article VI, sentence 3 of the OST responsibility for outer space "activities" by intergovernmental organizations is to be borne both by the intergovernmental organization and the States parties to the organization. Moreover, all provisions of the Treaty apply to activities carried on by international organizations by virtue of Article XIII of the OST. Thus, essentially the same uses can be practised by private actors and by international intergovernmental organizations[30].

In sum, States, non-governmental entities, and international intergovernmental organizations are allowed to use outer space and celestial bodies commercially, including for the extraction of minerals and other resources.[31] The limitation on this activity is contained in other provisions of the Treaty that will be analysed in the following.

B. Limitations by Article II of the Outer Space Treaty

One finds that certain provisions of the Treaty set limits to the uses of outer space. They are Article II, prohibiting national appropriation, as well as in certain respects Article I paragraph 1, providing that any use should be carried out for the benefit and in the interest of all mankind.

1. "National Appropriation"

Article II of the Outer Space Treaty states that "outer space, including the Moon and other celestial bodies, is not subject to national

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[28] See, *e.g.*, Christol, *supra* note 23 at 220, 262; Pritzsche, *supra* note 24 at 41.

[29] See, for instance, W. v. Kries, "Weltraumforschung" ["Exploration of Outer Space"] in K K.-H. Böckstiegel (ed.), *Handbuch des Weltraumrechts* [*Handbook of Space Law*] (Cologne, 1991) 245 at 251; K.-H. Böckstiegel, "Die Nutzung des Weltraums" ["The Use of Outer Space"] in K.-H. Böckstiegel (ed.), *Handbuch des Weltraumrechts* [*Handbook of Space Law*] (Cologne, 1991) 265 at 269.

[30] For international organizations, *cf.* Christol, *supra* note 23 at 220.

[31] To the same effect: Pritzsche, *supra* note 24 at 41; K.-U. Pritzsche, "Die Nutzung natürlicher Ressourcen" ["The Use of Natural Resources"] in K.-H. Böckstiegel (ed.), *Handbuch des Weltraumrechts* [*Handbook of Space Law*] (Cologne, 1991) 565 with further (comprehensive) references.

appropriation by claim of sovereignty, by means of use or occupation, or by any other means". The notion of "national appropriation" is not a traditional term in international law.[32] Neither the Antarctic Treaty of 1959,[33] which somewhat served as a model for the Outer Space Treaty, nor the Law of the Sea Convention of 1982 use the term "national appropriation". Irrespective of the precise meaning of the terminology employed by Article IV paragraph 2 of the Antarctic Treaty and Articles 89, 137 paragraph 1 of the Law of the Sea Convention, it cannot be denied that they do not use the exact wording of "national appropriation". Since the term "national appropriation" is not self-explanatory, an interpretation of this wording according to Articles 31 and 32 of the Vienna Convention is required. In the course of this interpretation, however, the above-mentioned Articles of the Antarctic Treaty and the Law of the Sea Convention might become relevant.

1.1 Ordinary Meaning of Terms

As provided by Article 31 of the Vienna Convention one should start with the interpretation of the ordinary meaning of "national appropriation". This is characterised by a mysterious mix of a private law concept "appropriation" and a public law concept "national". The second half of the provision of Article II of the OST may be of explanatory nature regarding the term of national appropriation. Article II of the OST further specifies national appropriation as encompassing "claims of sovereignty, [...] means of use or occupation, or [...] any other means". That very clearly amounts to a prohibition of any taking of land by claims of sovereignty. Therefore, Article II prohibits - and this is rather uncontested[34] - any establishment of titles by States with regard to the area of outer space and of celestial bodies, be it by claims of sovereignty or by occupation. Furthermore, the words "other means" could refer to the establishment of private titles by means of "use" or "any other means". According to this wording, it seems at least possible that Article II of the OST covers both public and private law titles with regard to the area of outer space and particularly that of celestial bodies. But this interpretation may be questioned hence other means of interpretation have to be employed.

1.2 Circumstances Surrounding the Conclusion of the Treaty and *Travaux Préparatoires*

First, Article II of the OST must clearly be seen against the background of the earlier regulation with regard to Antarctica contained in Article IV of the Antarctic Treaty of 1959. In its second paragraph, the

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[32] Pritzsche, *supra* note 24 at 76.

[33] *The Antarctic Treaty*, 1 December 1959, 12 U.S.T. 794, T.I.A.S. No. 4780, 402 U.N.T.S. 71.

[34] See, for instance, E. Brooks, "Control and Use of Planetary Resources" *Proc. 11th IISL Coll.* (Institute of International Space Law, 1969) 341 *ff.*; Pritzsche, *supra* note 24 at 74; F.G. von der Dunk, E. Back-Impallomeni, S. Hobe, R.M. Ramirez de Arellano, "Surreal Estate: Addressing the Issue of 'Immovable Property Rights on the Moon'" (2004) 20 Space Policy 149 at 152.

provision aimed expressly at the exercise of territorial sovereignty. However, this rather unambiguous language was not taken over but formulated more comprehensively in Article II of the OST.[35]

In so far, it is interesting to note that the US and the Soviet proposals[36] for the Outer Space Treaty were restricted to the national claims of sovereignty, the US proposal being clearly influenced by the Antarctic Treaty.[37] But these proposals, limited to public law titles, were not immediately accepted. The British representative also put forward a draft proposal that included the anti-sovereignty principle.[38] However, this rather narrow wording was not accepted either, which could indicate that the drafters wanted more than just the prohibition of public law titles. The Austrian delegate emphasized that the text should regulate not only the exploration of the Moon and other celestial bodies, but also the "use", so that any contradiction between the term "non-appropriation" and "use" could be prevented.[39] Also, according to the Belgian representative, no one had denied during the negotiations that the term "appropriation" covered both the "establishment of sovereignty" and the "creation of titles to property in private law".[40] This view was shared by the French representative.[41] On the other hand, the Soviet delegate warned that it would be unwise to look too far ahead and establish rules for future situations that could not clearly be foreseen.[42]

Thus, in sum, the negotiating history is ambiguous.[43] It was clear that the drafters wanted to exclude any possibility of State appropriation through sovereignty or occupation. But it was unclear whether private law titles should also be prohibited.

The very fact that some representatives during the negotiations remarked that one should not anticipate too much of the future development and that any prohibition of the freedoms to act should be spelled out clearly, in the opinion of this author only allows the conclusion that the negotiating history suggests that any private title to property equivalent to national appropriation by claims of sovereignty or use should be prohibited. Whether such interpretation is in accord with Article 31 paragraph 2 of the Vienna Convention should be carefully examined.

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[35] Pritzsche, *supra* note 24 at 77.
[36] Soviet proposal, UN Doc. A/AC.105/C.2/E.1 (6 June 1962); UN Doc. A/AC.105/C.2/L.6 (16 April 1963).
[37] US Representative Mr. Goldberg, UN Doc. A/AC.105/C.2/SR.58.
[38] UN Doc. A/AC.105/C.2/L.6 (16 April 1963).
[39] Austrian Delegation, UN Doc. A/AC.105/C.2/SR 58.
[40] UN Doc. A/AC.105/C.2/SR 71 (4 August 1966).
[41] UN Doc. A/C.1/PV.1492 (16 December 1966).
[42] UN Doc. A/AC.105/C.2/SR 58.
[43] For an account of the negotiating history of art. II OST see Christol, *supra* note 23 at 217 *et seq.*, and Brooks, *supra* note 34 at 339 *ff.*

1.3 Context

Any interpretation of Article II of the OST should consider this provision in the context of the freedoms as enshrined in Article I paragraph 2 of the Treaty and other possible limitations that could arguably be derived from Article I paragraph 1 of the Outer Space Treaty. According to Article I paragraph 1 of the OST, any exploration and use of outer space shall be carried out "for the benefit and in the interest of all countries". Article I paragraph 1 of the Outer Space Treaty as the initial provision of this Treaty has an overriding *leitmotiv* effect. It makes clear that outer space and the celestial bodies are there for the common use by all States and not only by certain States.[44] Any claim of sovereignty or of occupation of any part of outer space by one State would thus mean a use contrary to the common benefit clause.[45]

Therefore, the function of Article II of the OST becomes clear when viewed in conjunction with other relevant provisions of the Treaty. Whereas Article I paragraph 1 of the OST allows every State to use outer space and to enjoy possible benefits from such use by other States, Article II strengthens these rights providing that any title to property renders a common use or a common benefit from the use virtually impossible.

1.4 Object and Purpose

From the above considerations follows that the clear purpose of Article II of the OST is to prevent any exclusive claim to outer space and to celestial bodies in order to allow the use of these areas as *res communis*.[46] Such areas are available for inclusive uses rather than exclusive uses.[47] A view in the literature, promoted, *e.g.*, by E. Brooks, that wants to include the taking of resources in the prohibition as well,[48] is not convincing. It has no support in the text of Article II of the OST that refers only to territorial rights. Rather, it is more or less a matter of Article I paragraph 1 of the OST to limit possible uses in order to qualitatively allow all States to benefit therefrom.[49]

1.5 Subsequent State Practice

As already mentioned State practice since 1967 is also relevant - particularly in view of the fact that the Outer Space Treaty will soon be 40 years old. First, there is the negotiating history and the final text of the Moon Agreement of 1979, concluded 12 years after the adoption of

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[44] N. Jasentuliyana, "Article I of the Outer Space Treaty Revisited" (1989) 17 J. Sp. L 129.

[45] Also see S. Hobe, *Die rechtlichen Rahmenbedingungen der wirtschaftlichen Nutzung des Weltraums* [*The Legal Framework for Commercial Uses of Outer Space*] (Berlin : Duncker und Humblot, 1992) at 96.

[46] Christol, *supra* note 23 at 217.

[47] *Ibid.*

[48] Brooks, *supra* note 34 at 341, 342.

[49] Hobe, *supra* note 45 at 83.

the Outer Space Treaty.[50] Second, there is the United Nations Convention on the Law of the Sea of 1982, declaring the area of the deep seabed and its resources the "common heritage of mankind",[51] and, third, the Space Benefits Declaration of the United Nations General Assembly of 1996. One must highlight the importance of these three developments according to Article 31 paragraph 3 of the Vienna Convention as indicating relevant State practice. Reference is made to these documents because, apart from the uncontested commercial uses of outer space (*e.g.*, by satellites), no such commercial use with regard to celestial bodies exists at this time.

1.5.1 Article 11 paragraph 3 of the Moon Agreement

Article 11 paragraph 3 of the Moon Agreement certainly represents one of the most contentious and divisive provisions of the entire space legislation. However, the purpose of this analysis is limited to an attempt to interpret the key provisions of the Outer Space Treaty in the light of a subsequent State practice as reflected in the Moon Agreement. Article 11 paragraph 2 of the Moon Agreement equals Article II of the OST by prohibiting the national appropriation by claims of sovereignty, by means of use or occupation, or by any other means. It is indicative of the territorial nature of such claims if one compares this provision with the other paragraphs of Article 11 of the Moon Agreement. In its paragraph 3, Article 11 of the Moon Agreement makes it clear that neither the surface nor the subsurface of the Moon "nor any part thereof or natural resources in place shall become property of any State or intergovernmental or non-governmental organization or natural person". Furthermore, the Moon Agreement highlights that these areas and their natural resources - before being removed - cannot be made public or private property, reflecting Article II of the OST. The wording of Article 11 of the Moon Agreement indicates the different treatment of natural resources "in place" that are still part of the area, and such resources that are removed from the area which as a consequence can become subject to public or private titles to property.[52]

These provisions also suggest that any removal of resources from the Moon or other celestial bodies may make them subject to the usage regime indicated in Article 11 paragraph 7 of the Moon Agreement. If, 12 years after the coming-into-force of the Outer Space Treaty, the Moon Agreement of 1979 called for the establishment of an international regime to govern the exploitation of natural resources, this is indicative of the fact that at that time, State parties were convinced that no such prohibition was already incorporated in the 1967 Outer Space Treaty. Rather, the details should be negotiated later against the background of the basic structure as enshrined in Article 11 paragraph 7 of the Moon

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[50] See for a recent analysis R. Jakhu, "Twenty Years of the Moon Agreement. Space Law Challenges for Returning to the Moon" (2005) ZLW 243.

[51] *United Nations Convention on the Law of the Sea*, 10 December 1982, 21 I.L.M. 1261 [hereinafter *UNCLOS*] (entered into force on 16 November 1994), art. 136.

[52] Hobe, *supra* note 45 at 83; also see Christol, *supra* note 23 at 219 *et seq.*

Agreement. The establishment of a moratorium on the use of resources until the implementation of the international regime was also discussed in 1979.[53] This is further indication of the fact that no such moratorium or any equivalent was previously considered to exist under the Outer Space Treaty.[54]

1.5.2 Articles 136 and 137 of the Convention on the Law of the Sea

An additional observation is necessary regarding the concept of "common heritage of mankind" as provided in Articles 136 and 137 of the United Nations Convention on the Law of the Sea of 1982 (UNCLOS).[55] The Convention distinguishes between resources in the deep seabed, the area (in situ), and removed resources (minerals).[56] With regard to the area, Article 137 paragraph 1 and Article 89 of the UNCLOS support the view that national appropriation at any rate refers to appropriation of any part of the area by States. Article 137 paragraph 1 of the UNCLOS goes further, however, prohibiting any appropriation of any part of the area or its resources by private natural and juridical persons. This is complemented by the provision in Article 137 paragraph 2 of the UNCLOS that resources are not subject to alienation. Yet, minerals recovered from the area may be alienated in accordance with Part XI of the UNCLOS. Here again, one notes the dichotomy between a prohibition of any claims to territorial title to the "area" (of the deep seabed) and detailed provisions regarding the exploitation of such resources.[57]

1.5.3 Space Benefits Declaration of the UNGA

Finally, one should take into account the Space Benefits Declaration of the United Nations General Assembly of 1996.[58] This is extremely important since after many years as an item on the agenda of the United Nations Legal Subcommittee, this Declaration can be regarded as an authoritative interpretation of Article I paragraph 1 of the OST.[59] While the Declaration expands on Article I paragraph 1 of the

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[53] T. Gangale, "The Moon Agreement Revisited" (September 2006), online: OPS-Alaska website <http://pweb.jps.net/~gangale/opsa/spaceEx/MoonAgreementRevisited.htm> (date accessed: 14 June 2006).

[54] Hobe, *supra* note 45 at 243; K.-H. Böckstiegel, "Die kommerzielle Nutzung des Weltraums" in K.-H. Böckstiegel (ed.), *Handbuch des Weltraumrechts* [*Handbook of Space Law*] (Cologne, 1991) 277 at 282 *ff.*

[55] *UNCLOS*, *supra* note 51.

[56] *Ibid.*, art. 133.

[57] A. Kerrest, "Exploitation of the Resources of the High Sea and Antarctica: Lessons for the Moon?" in *Proc. 47th IISL Coll.* (Institute of International Space Law, 2004) 530. See also for an overall account of today's importance of the concept of the common heritage of mankind S. Hobe, "Was bleibt vom gemeinsamen Erbe der Menschheit?" ["What's left of the common heritage of mankind?"] in K. Dicke et al. (eds.), *Weltinnenrecht* [*World Internal Law*], Liber Amicorum Jost Delbrück (Berlin: Delbrück, Duncker & Humblot, 2005) 329.

[58] Space Benefits Declaration, *supra* note 9.

[59] On the declaration see M. Benkö/K.-U. Schrogl, "The 1996 UN-Declaration on "Space Benefits" Ending the North-South Debate on Space Cooperation" in *Proc. 39th IISL Coll.*

OST, it makes no statement whatsoever as to the question of a possible prohibition of the appropriation of natural resources.

As a result, one can clearly see that Article II of the OST explicitly and implicitly prohibits only the acquisition of territorial property rights, be they founded in public law (national appropriation) or in private law (by means of use or any other means). Both acquisitions of such titles are considered as contravening the very spirit of the Outer Space Treaty, which provides for the use of outer space and other celestial bodies by all States irrespective of their degree of scientific and economic development. Since the extraction of natural resources is not mentioned, it means that such use is allowed under the Outer Space Treaty. The only question in this respect remains the division of the benefits derived from those resources which is regulated by Article I paragraph 1 of the OST. And here the Space Benefits Declaration grants freedom to States to determine the specific modalities of international cooperation.[60]

2. The Limits of Private Appropriation

The text of Article II of the OST makes it clear that certain means equivalent to the acquisition of sovereignty are considered to be private means of the acquisition of territorial titles. Taking a look at the wording "national", one finds that Article VI unequivocally includes "non-governmental entities" in the scope of that term. Furthermore, the word "nationals" in Article IX refers *de facto* exclusively to non-governmental entities. Yet, if the same adjective "national" is used in different provisions of the same legal instrument, it must be admitted the same interpretation in each of these provisions - unless there is a clear differentiation in the text of a legal document. Moreover, by virtue of Article VI of the OST space activities carried out by non-governmental entities must be authorized and continuously supervised by the State. With regard to property rights, this becomes clear because any acquisition of property rights derives its authority by a State act that, for example, establishes a register of such rights with regard to territory.[61]

More recently an attempt has been made to reinterpret Article II because the Chinese text of this article differs from the English, French, Russian, and Spanish versions; in the Chinese version the term "national appropriation" would only mean appropriation by or for the State

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(Institute of International Space Law, 1996) at 183; for an account see also Hobe, *supra* note 5 at 338 *ff.*

[60] Para. 2 of the Space Benefits Declaration, *supra* note 9: "States are free to determine all aspects of their participation in international cooperation in the exploration and use of outer space on an equitable and mutually acceptable basis. [...]"

[61] To the same effect: W. Heymer, "Rechtsfragen der Nutzung des Weltraums und der Himmelskörper durch Privatunternehmen" ["Legal Issues Regarding the Use of Outer Space and Celestial Bodies by Private Companies"] in Alex Meyer, *Festschrift zu Ehren* (Cologne, 1975) 319 *ff.* at 326. A similar view is taken by V. Pop, "Appropriation in outer space: the relationship between land ownership and sovereignty on the celestial bodies" (2000) 16 Space Policy 275.

itself.[62] This arguably would allow the acquisition of private titles to territory on celestial bodies. While the Chinese text is equally authentic according to Article XVII of the OST and equally authoritative according to Article 33 of the Vienna Convention, it should be borne in mind that it is the only version of the official five languages allowing such interpretation, thus limiting the significance of the Chinese version in the light of Article 33 paragraph 4 of the Vienna Convention.[63]

It has already been mentioned that the acquisition of private property requires a regulatory framework that governs such activities. At the time of the conclusion of the Outer Space Treaty, private parties involved in space activities were subject to international responsibility through their national State. Any prohibition of public appropriation would therefore include the prohibition of private appropriation. And in general, it merits emphasis that, if the reference for the acquisition of private titles is missing through the prohibition addressed to States, then permission to acquire private territorial titles makes no sense or is, in other words, irrelevant. Thus, the prohibition against appropriation contained in Article II of the OST is fully applicable to private entities,[64] so that - in the interpretation given - States as well as private natural or juridical persons cannot acquire territorial titles to property.

3. The Limits of Appropriation by Intergovernmental Organizations

Moreover, it could be asked whether Article II of the OST also prohibits appropriation of the area by an international intergovernmental organization. While the Outer Space Treaty omits to allow international intergovernmental organizations to become members to the Treaty, Article XIII of the OST makes all provisions of the Treaty applicable to space activities carried on by international organizations.[65] Additionally, pursuant to Article VI of the OST both an international organization carrying on "activities" in outer space and the States parties to the organization are responsible for compliance with the Treaty.[66] Therefore, appropriation by intergovernmental organizations might be considered to come under "national appropriation" by virtue of Articles VI and XIII of the OST. It has been brought forward by C.Q Christol, however, that the terms "by any other means" of Article II of the OST prohibits the signatories to grant to an international organization the power to make valid claims (which States acting on their own behalf could not assert).[67]

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[62] R.J. Lee/F.K. Eylward, "Art. II of the Outer Space Treaty and Human Presence on Celestial Bodies: Prohibition of State Sovereignty, Exclusive Property Rights, or Both?" (International Astronautical Congress 2005, Fukuoka, Japan) IAC-05-E6.2.02 at 2; on the question of property in Moon samples, see C.W. Jenks, "Property in Moon Samples" in *Proceedings IISL Colloquium* (International Institute of Space Law, 1969) 148.

[63] See also Kopal, *supra* note 16.

[64] L.I. Tennen, "Commentary on Emerging System of Property Rights in Outer Space" (Paper presented at the United Nations/Republic of Korea Workshop on Space Law, 2004) at 67, 68.

[65] Hobe, *supra* note 45 at 71.

[66] Also see Christol, *supra* note 8 at 381.

[67] Christol, *supra* note 23 at 222 *et seq.*

Examining the issue in detail would go beyond the scope of this article. Suffice it to say that in both cases - either interpreting "by any other means" according to C.Q. Christol, or referring to the provisions of Articles VI and XIII of the OST - international intergovernmental organizations in effect are limited in their space activities by Article II of the OST to the same extent as are States parties to the Treaty. Thus, international organizations cannot acquire territorial titles to property, neither in their own right nor by being conferred such rights by States.

C. Limitation of Uses by Article I paragraph 1 of the Outer Space Treaty

Considering limitations on the freedom of use of outer space and the celestial bodies by Article I paragraph 1 of the OST, most of the difficulties arise because the wording is rather vague. As we have seen concerning the taking of resources, Article I paragraph 1 of the OST can be the only possible source for a reallocation of benefits derived from the commercial exploitation that is so far permitted. Article II of the OST prohibits only the acquisition of territorial titles. One can highlight in broad terms that Article I paragraph 1 of the OST prohibits any use of outer space that makes it impossible to treat outer space as the common province of all mankind. This also can be noticed from the ITU's regulatory regime, which concretises Article I paragrah 1 of the OST with respect to the geostationary orbit[68] and shows a clear trend towards equitable distribution of radio frequencies and geostationary orbital positions.[69] Looking at the common heritage concept as enshrined in Article 11 of the Moon Agreement, one can see that the eventual sharing of resources or of the benefits derived from those resources is the aim of the establishment of a legal regime for the exploitation of outer space and the celestial bodies. Such a legal regime does not exist yet. What is clear from the outline of such a regime as provided for in Article 11 paragraph 7 of the Moon Agreement is that the acquisition of resources is not prohibited. Rather, this Article is concerned with ensuring that the international community profits from the taking of the resources from outer space and the celestial bodies.[70]

Thus, one can state that the freedom of economic exploitation of outer space and the celestial bodies is limited, on the one hand, by a prohibition of the acquisition of territorial titles by States, non-governmental entities, and international intergovernmental organizations and, on the other hand, by a rather vague enunciation of the concept that the exploitation of such resources should be for the benefit of all mankind. The details of such a regime still have to be worked out. Before such a regime is established, this constraint is of rather limited practical significance.

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[68] Hobe, *supra* note 45 at 180 *et seq.*

[69] R.S. Jakhu, "The Evolution of the ITU's Regulatory Regime Governing Space Radiocommunication Services and the Geostationary Satellite Orbit" (1983) VIII Ann. Air & Sp. L. 381 at 404 *ff.*

[70] Hobe, *supra* note 45 at 235.

III. Concluding Remarks

On the basis of the above examination of the provisions relevant to (economic) uses of outer space and the celestial bodies, the following concluding remarks can be made.

First, Article II of the OST prohibits the appropriation by States both of areas of outer space and on celestial bodies.

Second, this prohibition of the appropriation by States extends, through Article VI of the OST, also to private persons and entities; the purpose of these prohibitions is to assure that the use of outer space will benefit all States.

Third, Article II of the OST does not prohibit the extraction and the appropriation of natural resources.

Fourth, there is, however, some limitation as to the exclusiveness of such use of resources hinted to in Article I paragraph 1 of the OST. The purpose of this provision is the preservation of outer space and the celestial bodies for all mankind. That can be achieved by the establishment of a legal regime that makes explicit the philosophical ideas behind Article I paragraph 1 of the OST envisaged in Article 11 paragraph 7 of the Moon Agreement.

In other words, the present legal regime of the Outer Space Treaty does not prohibit the extraction and appropriation of natural resources. The regime for the sharing of the benefits derived from these resources has not yet been established so that actual limitations for the extraction and appropriation of natural resources cannot be currently determined.

The responsibility imposed on States under Articles VI and IX of the OST may trigger a degree of control by the State vis-à-vis private economic activities. It is thus in the interest of States to establish a legal regime governing private space activities.

Given the ambiguous wording of Articles II and I paragraph 1 of the OST, it is highly desirable to come up with some clarifications. This could be done through creation of the international legal regime called for in Article 11 paragraph 7 of the Moon Agreement, which in turn could eventually lead to a greater acceptance of this almost (only 12 ratifications after 27 years) moribund international agreement.[71] In this respect, important modifications to the original concept of the "common heritage of mankind" as envisaged in the 1982 Law of the Sea Convention together with the Implementing Agreement of 1994 could

[71] In this respect, see F.G. von der Dunk's special report on the 1979 Moon Agreement, ILA New Delhi Conference (2002), Space Law Committee, summarised by M. Williams, "Final Report on the Review of Space Law Treaties in View of Commercial Space Activities", online: ILA website <http:// www.ila-hq.org/pdf/Space%20Law/Space%20Law%202002.Pdf> (date accessed: 15 September 2006).

serve as an important model.[72] Such an initiative would accord with the current liberal world trade order, without totally neglecting the principle that outer space and the celestial bodies are the province and the heritage of the entire mankind. Also, the International Law Association's Resolution 1/2002 (of New Delhi) could prove useful by declaring that the "common heritage of mankind" concept is not incompatible with the economic uses of outer space and the celestial bodies.[73]

In the alternative, and following its more recent practice with regard to space regulation, the United Nations General Assembly could adopt a resolution that would provide the legal framework for (economic) uses of the outer space and the celestial bodies by giving an authoritative interpretation of Articles I paragraph 1, II and VI of the OST.

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[72] *Cf.* J.I. Charney, "Entry into Force of the 1982 Convention on the Law of the Sea" (1995) 35 Va. J. Int'l L. 381.; Hobe, *supra* note 57 at 338.

[73] Cf. para. 4 of ILA Resolution 1/2002 in: ILA (ed.), "Report of the Seventieth Conference, New Delhi 2-6 April 2002" (2002) 13 at 14: "[...] the common heritage of mankind concept has developed today as also allowing the commercial uses of outer space for the benefit of mankind, and that certain adjustments are suggested to article XI of this Agreement concerning the international regime to be set up for the exploitation of moon resources, which will make it more realistic in today's international scenario [...]".