Rebus sic stantibus and International Space Law

The Evolution of the Space Treaties in the Next Fifty Years

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Abstract

The unanimous adoption of the space treaties in the peak of Cold War was considered great success at the time. With the drastic change in the image of the space sector though, both in terms of international cooperation and technological progress, the Space Treaties are often criticised for not reflecting the said changes in an adequate manner. The lack of key terms and definitions, as well as the generic character of their provisions, which leaves room for various interpretations, are frequently attributed to the political circumstances and the level of technological development under which the Treaties were concluded. Nevertheless, their significance is undisputed, as they contain fundamental principles that have been followed consistently for the past half-century. However, it was not until recently that their relevance to the current status of the space sector started being contested. The increasing participation of private actors in space activities, along with the enormous technological progress and innovation in the space sector was not foreseen by the drafters of the Treaties, who merely attempted to reconcile different national interests in order to accommodate the demands of all their States parties. Space resources utilisation, human travel, and settlement in outer space, liability for large satellite constellations, debris risks posed by small satellites, are only a few of the issues that the space treaties are challenged to tackle.

This paper will discuss the concept of reviewing the treaties once significant changes take place, as well as the ways for the law to cope with policy and technological developments in the space sector. In addressing these questions, the paper will examine the treaties in the framework of the public international law principle of *rebus sic stantibus*. According to the latter, treaties shall become inapplicable when fundamental changes of circumstances occur. The paper will debate on whether this is a feasible solution to respond to raising legal challenges and on how this principle could influence the future regulation of space activities. In particular, it will stress the importance for the existing and future regulatory regime to take into account the intention of the States to agree to the text of the treaties and the fast-moving pace of the space sector. With view to the next fifty years of space treaties, acknowledging their relevance to the contemporary stage of space technology is essential in

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safeguarding the efficient application and successful evolution of international space law.

1. Introduction

The first binding international space law document, the Outer Space Treaty was concluded fifty years ago,[1] with the most recent regulatory achievement being the introduction of the Moon Agreement in 1979.[2] The unanimous adoption of the space treaties[3] equipped them with international recognition to endure half a century of presence and application. The great diplomatic success behind their conclusion was the outcome of significant deal of compromise among the States, in order to be able to reach the required consensus. Their agreement was led by the need to establish a regulatory framework to govern the activities of States in outer space.[4] This realisation came from the emergence of the first space activities paired with the fragile political environment of the time. During the past five decades, both said factors have undergone fundamental changes. The state of technology in the space sector is unprecedented and continues to develop exponentially. At the same time, the Cold War era belongs far into the past, since nowadays competition is mostly found in the relations among private actors that strive for innovation and success.

This paper will examine, through the scope of the *rebus sic stantibus* doctrine, whether the aforementioned change of circumstances in the space sector has fundamentally affected the initial intention of the States to commit to the space treaties. Towards this end, it will attempt a historical reflection into the background of the adoption of the Outer Space Treaty, being the cornerstone of international space law,[5] so as to assess the impact of the technological and political development on its status. In this regard, it will elaborate on whether the changes occurred have influenced the objective of

1 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 610 UNTS 205, 1967 (hereinafter Outer Space Treaty, OST).

2 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, 1363 UNTS 21; 1979 (hereinafter Moon Agreement, MOON).

3 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Space, 672 UNTS 119, 1968 (hereinafter Rescue and Return Agreement, ARRA); Convention on International Liability for Damage Caused by Space Objects, 961 UNTS 187, 1971 (hereinafter Liability Convention, LIAB); Convention on Registration of Objects Launched into Outer Space, 1023 UNTS 15, 1975 (hereinafter Registration Convention, REG).

4 M. Smirnoff, Space Law as an Element of Understanding between the Peoples of the Earth, Proceedings of the 4th Colloquium on Space Law, 1961, 221-222.

5 The importance of the Outer Space Treaty in the framework of international space law is stressed in Article 1 of the Draft Declaration on the 50th Anniversary of the OST, A/AC.105/C.2/L.300 (Annex), 2.

the States to be bound by the treaties in such a way that could trigger their termination.
Its ultimate purpose is to support that thanks to their general character, the space treaties are not significantly affected by eventual progress in the field of space activities. The paper also aims to indentify the lessons learnt during the fifty years of international space law, which should be taken into account for the next five decades of its application, as well for future regulatory initiatives.

2. The Past 50 Years: Fundamental Changes in Space Activities

The current status of the space sector differs significantly from the picture that the drafters of the space treaties had in mind. Both in terms of the nature of space activities as well as of the actors involved, the face of the space sector has radically changed since the time the first space law documents were concluded.[6]
Fifty years ago, the benefits from space activities were realised to a very limited extent, while the potential of space applications was barely understood. This is partly the spirit that is reflected in the space treaties. Space activities were seen either as a way to secure national defence interests, through surveillance and remote sensing or as a tool to provide infrastructural civil services, such as telecommunications.[7] Therefore, the current legal challenges raised by the commercialisation of space activities and the increasing private invlolvement were not taken into consideration when negotiating the treaty provisions.

From Peaceful to Commercial Purposes
The political background of the late 60s that influenced the content and the negotiations on the Outer Space Treaty seems distant to the current environment of general cooperation among the States in the conduct of space activities. Amid the Cold War between the great powers of the time, that were also the pioneer space faring nations, maintaining outer space for

6 The Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space (A/RES/18/1962) was the first space law document adopted by the UN General Assembly. Many of its principles were later included in the Outer Space Treaty; more on the first convention of a UN *ad hoc* Committee: M. Lachs, Some Reflections on the State of the Law of Outer Space, 9 Journal of Space Law, 3, 1981, 9.

7 J. Johnson-Freese, The Tortoise and the Tortoise: The New Race for Space, 7 Space Policy (vol.3), 199, 1991, 199; G. P. Zhukov, Basic Stages and Immediate Prospects of the Development of Outer Space Law, Proceedings of the 7th Colloquium on the Law of Outer Space, 1965, 317.

exclusively peaceful purposes was the ultimate priority.[8] A look into the preparatory work of the Outer Space Treaty[9] reveals the importance attributed to maintaining outer space as an exclusively peaceful environment.[10] The argumentation presented by the delegates to UNCOPUOS was centred exclusively on the drafts presented by the US and the USSR,[11] in fear of being unable to reach the desired unanimity.[12] Despite other provisions that were put forward by various countries,[13] the debate was dominated by the drafts submitted by the opposite fronts of the Cold War. It derives from the discussions during the COPUOS sessions that the ultimate purpose of establishing an international binding regime to govern the activities of States in outer space was solely to maintain space for peaceful uses.[14] This tense diplomatic environment did not leave sufficient ground for the actual legal challenges to be considered. Similarly, despite the fact that the subsequent space treaties were meant to be the regulatory extension of the Outer Space Treaty, they did not manage to address the specific issues in an adequate manner.[15]

Even though the peaceful use of outer space is still considered a cardinal parameter within the framework of space law,[16] the UNCOPUOS mandate

8 S. Hobe, Historical Background in S. Hobe, B. Schmidt-Tedd, K.-U. Schrogl (eds.), Cologne Commentary on Space Law, 2010, 3-4.

9 Article 32 of the Vienna Convention on the Law of the Treaties suggests the travaux preparatoires as supplementary means of interpretation.

10 Opening Comments by Goldberg (US Delegate to UNCOPUOS) and Morozov (USSR Delegate to UNCOPUOS), A/AC.105/C.2/SR.57, 1966, 94.

11 US Draft, Draft Treaty Governing the Exploration of the Moon and Celestial Bodies, A/AC.105/32, 1966, 1-7; USSR Draft, Report of the Legal Subcommittee on the Work of its 5th Session (12 July-4August and 12-16 September 1966) to the Committee on the Peaceful Uses of Outer Space, A/AC.105/35, 1966, 10-16. On the conflict between the two drafts: G. Zhukov, Problems of Space Law at the Present Stage, 5th Colloquium on the Law of Outer Space, 1, 1962, 1-2.

12 C. Q. Christol, The United Nations and the Development of International Law – Unanimous Resolutions of the General Assembly dealing with Outer Space, 23 Proceedings of the Institute of World Affairs in C. Q. Christol, Space Law: Past, Present and Future, 1991, 311.

13 Presentation of Arguments by UNCOPUOS Delegations, Report of the Legal Subcommittee on the Work of its 5th Session (12 July-4 August and 12-16 September 1966) to COPUOS, A/AC. 105/35, Annex IV.

14 The use of outer space for peaceful purposes is mentioned in the preamble of all the space treaties: Recital 4 OST, Recital 3 REG, Recital 1 LIAB, Recital 1 ARRA, Recital 4 MOON.

15 B. G. Dudakov, The Outer Space Treaty and Subsequent Scientific Development of International Space Law, Proceedings of the 25th Colloquium on the Law of Outer Space, 1974, 107.

16 The UNCOPUOS Legal Subcommittee Working Group on the Review of International Mechanisms for Cooperation in the Peaceful Exploration and Use of

has expanded in the recent years to topics that reflect different regulatory priorities.[17] Consequently, the objective of the States is no longer limited to peaceful activities, but its aim is extended to address commercial conducts as well.[18]

From Public to Private Involvement

The evolving nature of space activities also brought changes to the participating stakeholders. For the biggest part of the past five decades, space activities were carried out under the auspices of governmental authorities, therefore the space law system is based in its entirety on regulating the activities of the public sector. The technological progress combined with the realisation of the business opportunities created in the space field increased the incentive for private contribution in space activities.[19]

However, at the time of the drafting of the Outer Space Treaty, the idea of private activity in outer space found strong opposition in the USSR-proposed text of the Treaty, while it was present among the regulatory goals of the US draft.[20] In order to balance the conflict of interests, the Treaty includes one single provision in Article VI, which connects the activities of natural or juridical persons with their State by imposing international responsibility to the latter for any misconduct of the formers.[21] This provision has constituted the basis of the introduction of subsequent national space legislations, which guarantee that international obligations are followed by public and private actors alike.[22]

Outer Space is examining ways to strengthen international cooperation in the peaceful use of outer space.

17 The issue of space resources was introduced in 2017 as a new item of the UNCOPUOS agenda under the title "'General exchange of views on potential legal models for activities in the exploration, exploitation and utilisation of space resources"; see also on the same subject: T. Masson-Zwaan, N. Palkovitz, Regulation of Space Resources Rights, 35 QIL, Zoom-in 5, 2017, 14-15. The issue of suborbital flights is also addressed by the UN Office of Outer Space Affairs that has been organising since 2015 the ICAO/UNOOSA Aerospace Symposium, https://www.icao.int/meetings/space2017/Pages/default.aspx.

18 More on examples of commercialisation of outer space at: M. Bourely, Space Commercialisation and the Law, 4 Space Policy (vol.2), 131, 1988, 131.

19 Already in the 80s Christol was predicting the increasing participation of the private sector in space activities, C. Q. Christol, Space Law: Past, Present and Future, 1991, 479.

20 P. Jankowitch, The background and History of Space Law, in F. Von der Dunk, F. Tronchetti (eds.), Handbook of Space Law, 2015, 6.

21 I. H. P. Diederiks-Verschoor, An Introduction to Space Law, 2008 (3rd rev. ed.), 28-29.

22 Proceedings on the Workshop on Space Law in the Twenty-first Century, UNISPACE III Technical Forum, July 1999, A/CONF. 194/7, 11-19; P. De Man, State Practice, Domestic Legislation and the Interpretation of International Space Law, 2017, https://www.law.kuleuven.be/iir/nl/onderzoek/wp/wp181deman.pdf.

In spite of this intermediate solution, the growing participation of the private sector is currently raising challenges further than State responsibility. In order for a healthy business environment to be achieved, legal certainty on particular matters is of utmost importance.[23] Issues such as safety of commercial spaceflight personnel, ownership over space minerals, as well as liability caused by non-manoeuvrable small satellites are imminent concerns that are mainly regulated only by the general principles included in the treaties. The said provisions though are lacking essential definitions, thus impeding their application in the aforementioned cases. In that sense, there is still a long way to be paved for the activities of private actors to be regulated adequately under the existing space law regime.[24]

Summing up, the factors that influenced States towards agreeing on the content of the space treaties are different from the current initiatives of the States. Their intention has shifted from ensuring the use of outer space for exclusively peaceful purposes to regulating commercial and other aspects of the space sector. This is due to the different priorities put forward, which reflect two opposite approaches to the regulation of space activities in the past and the present. On the one hand, compromising substantial legislative progress in order to achieve the desired unanimity was the background of the negotiations for the five space treaties. On the other hand, the current discussions at UNCOPUOS are focusing on rather practical issues, which address specific contemporary legal concerns. It will be examined below whether this change of circumstances and consequent change in the objective of the States has affected the space treaties in such way that they do not find any more ground for efficient application.

3. The *rebus sic stantibus* Doctrine

International agreements are concluded on the basis of the circumstances that the parties took into account at the time of their conclusion.[25] Following the natural evolution of things, these circumstances are subject to changes, which can occasionally be so drastic as to no longer reflect the initial intention of the parties to agree on specific obligations. In other words, the parties, taking into consideration their contemporary state of things (*rebus sic stantibus*), have agreed to specific obligations (*conventio omnis intelligitur*). Should this state of things have been different or should it become different, they would either not have agreed in the first place or would wish to agree on different terms. Within the framework of space law, the discussions are more often than not pointing to the fact that the space treaties do not represent anymore

23 A. Dula, Private Sector Activities in Outer Space, 19 The International Lawyer, 159, 1985, 174-179.

24 *Ibid*., M. Bourely, 140.

25 A. Vamvoukos, Termination of Treaties in International Law, 1985, 3.

the legal challenges raised by the modern development of the space sector.[26] The validity of this statement will be addressed once the *rebus sic stantibus* notion is elaborated.

Definition of the Term

The *rebus sic stantibus* doctrine can be summarised as the change occurred to the circumstances under which an agreement was concluded. This change is as essential as for the value of the agreement at hand to be contested. The space treaties were concluded during a period where the state of the space sector was totally different than it is today. Hence, they have recently been scrutinised for not sufficiently addressing the current legal challenges. Should this doctrine find application in international space law, the status of the treaties will be in need of review.

Following centuries of appearance in legal texts and cases,[27] the *rebus sic stantibus* doctrine was codified in Article 62 of the Vienna Convention on the Law of the Treaties,[28] titled "Fundamental change of circumstances". According to the latter, the doctrine consists of three elements.[29] First, a change to the circumstances in comparison to those existing at the time of the conclusion of a treaty should have occurred. Second, for the doctrine to produce its effect, the change needs to be fundamental and not foreseen by the parties at the time of reaching the specific agreement.[30] Third, it is required that the initial circumstances were the reason that the parties agreed to be bound in this specific context and that their change is as radical as to transform the current obligations under the same binding document.[31] When

26 A recent instance was the US Congress Hearing on the "Reopening the American Frontier: Exploring how the Outer Space Treaty will Impact American Commerce and Settlement in Space" that took place in May 2017, https://www.commerce.senate.gov/public/index.cfm/2017/5/reopening-the-american-frontier-exploring-how-the-outer-space-treaty-will-impact-american-commerce-and-settlement-in-space. With regard to the Hearing the Secure World Foundation and the Board of the International Institute of Space Law submitted letters to the Congress in stressing the significance of the Outer Space Treaty. https://swfound.org/news/all-news/2017/05/swf-submits-letter-to-congress-on-commercial-space-development-and-the-outer-space-treaty; http://iislweb.org/wp-content/uploads/2017/06/Board-to-US-Congress-2017_final.pdf.

27 Gentili, De Jure Belli Libri Tres, 1612, 365; F. Suarez (Selection of Work), De Triplici Virtute Theologica, Fide, Spe et Caritate, 1621, 853; H. Lauterpacht (ed.), Oppenheim's International Law, 1955 (8th edition), 538-538.

28 Vienna Convention on the Law of the Treaties, 1155 UNTS 331, 1969 (hereinafter, Vienna Convention, VCLT).

29 Article 62 VCLT.

30 M. Evans, International Law, 2010 (3rd ed.), 197-198.

31 O. Corten, P. Klein (eds.), The Vienna Convention on the Law of the Treaties – A Commentary (Vol. II), 2011, 1426.

all three requirements are met, a party could claim withdrawal from or termination of the treaty.[32]

The origins of the *rebus sic stantibus* doctrine and its interpretation into the legal practice are unclear. The concept is present in writings of Roman times referring to the implied intention of the parties not to be bound by an agreement when changes have occurred since its conclusion.[33] However, it is elaborated and developed much later, as a contractual clause in private law contracts,[34] before it moves during the 19th century into the sphere of public law, describing the intention of States to be bound by specific obligations. Ever since its progress and continuity is closely linked to the sovereign decision-making power of the State. The whole concept stems from the fact that the State is the highest organisation in the international community, thus its intention towards a commitment is the only driving force behind it.[35] In simple terms, any change to the circumstances that triggered the intention of the States to commit would be incompatible with the principal concept, that of self-determination of a State.[36] The doctrine has undergone through time several different interpretations. In its infancy in international law it was considered as applying to all treaties, a fact that brought *rebus sic stantibus* to the attention of legal scholars and initiated the discussion on its impact on international treaties. It was suggested that since a State is bound only to the extent that it so wishes, a change in the circumstances under which the decision to be bound was made, would also alter the intention of that State to be bound to a particular treaty, thus creating grounds for that State to withdraw from its obligations.[37] In recent theory, *rebus sic stantibus* is considered part of customary international law,[38] its purpose being to give an end to treaties that are no longer applicable,[39] and not to be used as a tool for reviving outdated treaty provisions.[40]

During its evolution the doctrine has also faced severe criticism, given that the claim of changed circumstances is threatening the pillar of international

32 J. Crawford, Brownlie's Principles on International Law, 2012 (8th ed.), 394.
33 Cicero, On Obligations (First book), 2000, IX; Seneca, On Benefits, IV, XXXIX; C. G. Fenwick, International Law, 1965 (4th edition), 545.
34 G. Fitzmaurice, Second Report of the Law of the Treaties, A/CN.4/107, Yearbook of the International Law Commission (vol. II), 1957, 146-149.
35 J. C. Bluntschli, Das Moderne Volkerrecht des Zivilisierten Staaten als Rechtsbuch Dargestellt, 1822, 102.
36 A.P. Higgings (ed.), W.E. Hall, A Treatise on International Law, 1924 (8th ed.), 415.
37 D. Anzilotti, Corso di Diritto Internazionale, 1955, 376-384.
38 *Ibid*., O Corten, P. Klein (eds.), 1416; Fisheries (UK v. Iceland), Judgement 25/7/1974, ICJ Reports, 3 par. 36.
39 H. Waldock, Second Report on the Law of Treaties, A/CN.4/156 and Add. 1-3, Yearbook of the International Law Commission (vol.11), 1963, 80.
40 H. Lauterpacht, The Development of International Law by the International Court, 1982, 86.

legal order, namely the certainty of the law.[41] The principle of *pacta sunt servanda*,[42] demands that the binding force of an agreement, the purpose and intentions of its establishment, and its performance in good faith, prevail over a literal application of its text, which is no longer reflecting the previous conditions.[43] On the one hand, it is supported that States could assume that they are no longer bound by a treaty, when the circumstances under which they came into an agreement have significantly changed. On the other hand, the importance of the stability of law mandates that *rebus sic stantibus* is applied only in extraordinary cases and in a very conservative manner.[44] In order to connect both ends, the *rebus sic stantibus* doctrine can be seen as an exception to the *pacta sunt servanda* principle, since they both form part of the Vienna Convention, whose provisions have to be read in a complementary manner. In such case, the question would be whether the *rebus sic stantibus* claim results to actual changes to the status of an agreement or whether it could be deployed only as an interpretation mechanism.[45]

The Effect of the rebus sic stantibus Doctrine on the Space Treaties

To assess the effect of the *rebus sic stantibus* doctrine on the space treaties an examination of its individual elements is in order. The Vienna Convention demands that the unforeseen and fundamental changes affect circumstances that formed an integral part of the decision of the States to agree to a treaty.[46] At first, even though space activities in the 21st century are significantly different than those in the mid-20th century, the changes do not appear as essential as to radically modify the basis of the treaty obligations agreed or to impose burdens to the application of the space treaties. For instance, the aforementioned space mining endeavours are not discussed as a reason to

41 Grotius was among the first to suggest a balance between the eventual changes in circumstances and the need for legal certainty. He was of the opinion that the principle can be effective only if the specific circumstance that changed was the sole reason of the agreement. He would add that rather than an issue of the validity of an agreement, *rebus sic stantibus* reveals a problem of its interpretation to match with the contemporary state of things. Grotius, De Jure Belli ac Pacis, Libri Tres (vol. II), 1625, 853.

42 Article 26 VCLT.

43 Article 62 VCLT; Gabcikovo-Nagymaros Project (Hungary v. Slovakia), Judgment 19/09/1997, ICJ Reports 1997, 7 par. 114.

44 G. Tenekides, Le Principe Rebus Sic Stantibus: Ses Limites Rationnelles et sa Recente Evolution, 41 Collected Courses of The Hague Academy of International Law, 273, 1934, 276-280.

45 O. Lissitzyn, Treaties and Changed Circumstances (Rebus Sic Stantibus), 61 American Journal of International Law, 895, 1967, 896.

46 *Ibid*. Gabcikovo-Nagymaros Project, 7 par. 65.

abolish the non-appropriation principle. Instead, ways are considered in order to make mining feasible within the current legal framework.[47]
Moreover, the changes occurred were not in any way unforeseen, even if the modern technological advancement associated with them was not conceived properly. The most prominent example is the reference in the Moon Agreement to the establishment of a mechanism to govern space resources governance mechanism when technology renders these missions feasible.[48]
Lastly, when it comes to the intention of the States to commit to the provisions of the treaties, the animus to set up specific regulations pertaining to the activities of States was not based on circumstances that have been modified throughout the decades. The intention was to agree upon general guidelines with potential prospect to adopt specific regulation if and when this need would come into the scene, and is still valid nowadays.
Overall, the space treaties were concluded because a legal framework was needed to rule the newly introduced activities in outer space.[49] Similarly, the text of the treaties was formulated in such way because specific priorities were recognised. There is no sufficient indication though that their content would have been significantly different or even not agreed upon, if the state of the space sector was as advanced as it is today. This is further supported by the fact that the space treaties have been consistently applied since their adoption, to the extent that some of the Outer Space Treaty provisions are considered customary law.[50] At the same time, they are still taken as reference for current and future regulation,[51] while the number of signatory States is still growing.[52]

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47 In November 2015 the US adopted a law that would facilitate the commercial exploitation of space resources, Title IV "Space Resource Exploration and Utilization", U.S. Commercial Space Launch Competitiveness Act (H.R. 2262), https://www.congress.gov/bill/114th-congress/house-bill/2262/text. Title IV mentions explicitly in Section 403 that "The US does not assert sovereignty or sovereign rights or exclusive rights or jurisdiction over, or the ownership of, any celestial body". This provision served as a clarification that the prohibition of appropriation enshrined in Art. II OST is respected. In affirmation of the non-violation of the prohibition by the US Law, the International Institute of Space Law issued on 20/12/2015 a Position Paper on Space Resource Mining, http://iislwebo.wwwnlss1.a2hosted.com/wp-content/uploads/2015/12/SpaceResourceMining.pdf.

48 Art. 11.5 MA is the only reference in the space treaties specific to resources.

49 L. Perek, Interaction between Space Technology and Space Law, 18 Journal of Space Law, 19, 1990, 19-20.

50 M. S. McDougal, The Emerging Customary Law of Space, 618, 58 Northwest University Law Review, 1963-1964, 627 ff.

51 The UNCOPUOS Legal Subcommittee Working Group on The Status of the Space Treaties is discussing on a regular basis issues concerning their application, while international space law is mentioned and followed by domestic space legislations.

52 Venezuela was the most recent State to sign the Outer Space Treaty in November 2016, raising the number of State parties to 105.

Nonetheless, even if the changes were found of fundamental character and capable of impacting the intention of the States, withdrawing from or terminating a space treaty is an ineffective way to tackle current deficiencies.[53] In the place of general provisions, there would be no provisions at all, while the difficulty of reaching international consensus would remain challenging. Additionally, there is no guarantee that a new space treaty would take into account circumstances further than the contemporary ones. The ongoing technological advancement would still pose the risk of future space treaties to be rendered outdated.[54]

A more feasible option would be to consider the *rebus sic stantibu*s doctrine as the need to interpret the space treaties in a way that would encompass the current legal challenges and would reflect the existing shape of in the space sector. The acknowledgment of the fact that circumstances have changed since the adoption of the space treaties, would thus lead to a better understanding of the general nature of *corpus juris spatialis* and of its timeless character.

4. The Next 50 Years: The Future of *corpus juris spatialis*

As already mentioned, the space sector has undergone major changes in the six decades since the first artificial satellite was placed in orbit. Regardless of the evolution of space law during the following decades of space progress, changes would undoubtedly occur and will continue so in the future. Either in terms of technological development, of the intention of States to regulate specific categories of activities or of the turn towards soft law and self-regulation of space conduct,[55] the circumstances will only continue to evolve in the years to come. It is therefore important to take into account the impact of the changes so far on the space treaties, and to point out the lessons learned for the future.

Firstly, taking into consideration the *rebus sic stantibus* doctrine in the discussions on the prospects of space law will help understand and embrace the unforeseeable future events in the space sector. This way, even if future challenges are not accounted for, negotiations will take place on more realistic grounds. Secondly, the unanimity required in UNCOPUOS procedures will still be a rather unattainable scenario. It has been more than forty years since consensus led to an actual outcome. Already at the time of

53 P. Malanczuk, Akehurst's Modern Introduction to International Law, 1997 (7th edition), 145.

54 G. Danilenko, International Law-making for Outer Space, 5 Space Policy vol. 4, 321, 1989, 325. The author talks about "anticipatory regulation" referring to law-making based on the events that are foreseen at the time of the drafting.

55 The benefits of soft law regulations in the space sector are briefly summarised in F. Lyall, P. B. Larsen, Space Law – A Treatise, 2009, 51-52.

the adoption of the Moon Agreement, political accord was fading. Consequently, the option of amending the treaties or adopting new ones in their place might prove non-feasible. Thirdly, for the sake of preservation of space law, it is important that it does not impede technological progress. Eventually, law-making is mostly based on the practices of the past, whereas regulating activities that have not yet been unfolded and tested would lead to inefficient or redundant legislation. Balance could be struck by adopting texts that are flexible enough to encompass future changes. Finally, maintaining the status of space law within the framework of international law is of utmost importance. Apart from regulating a specific set of activities and despite any deficiencies, space law has contributed greatly to the advancement of international law in general. The freedoms of outer space, the international cooperation among States, the benefit of all mankind and the abolishment of sovereignty are concepts that had not appeared before, yet they managed to gain a spot in legal theory. The Outer Space Treaty, as well as the other four treaties, definitely leaves room for ambiguity.[56] However, its status as the *Magna Carta* of space law is undisputed. It is widely recognised that the Treaty contains only general principles that are meant to either be translated to fit specific issues or to serve as basis for more detailed regulations.[57]

The Treaty provides for general guidelines that reflect the legal rationale behind its adoption, but occasionally needs further interpretation in order to be applied in practice. Any subsequent change to the circumstances surrounding space activities is not fundamental enough to push the Treaty out of the frame. Its text is crafted in such way that can be interpreted in order to accommodate the current and future legal challenges. Instead of replacement or modification, what space law needs at the moment is proper interpretation. The *rebus sic stantibus* principle should serve as a lesson to approach the space treaties as a living set of laws, rather than an outdated one. To this extent, the existing legislation will serve as the general basis for subsequent regulation, while future laws will take into account the fast-changing pace of space technology, providing for more adequate and flexible regulation.[58]

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56 M. Smirnoff, The Treaty on Outer Space 1967 – Its Role and Importance, Proceedings of the 10th Colloquium on the Law of Outer Space, 1967, 155.

57 N. Poulantzas, The Outer Space Treaty of January 27 1967 and its Aftermath, Proceedings of the 11th Colloquium on the Law of Outer Space, 1968, 50; E. Galloway, Interpreting the Treaty on Outer Space *Part IV – Problems of Interpretation of the Space Treatment of 27 January 1967, Proceedings of the 10th Colloquium on the Law of Outer Space,* 1967, 143.

58 M. Lachs, The Development and General Trends of International Law in our Time, 169 Collected Courses of The Hague Academy of International Law, 1980, IV.

5. Concluding Remarks

The space treaties were established in order to set mere benchmarks for the activities of States in outer space. The international community does not yet appear prepared to stretch their content further, in order to extend their application outside the designated boundaries. Therefore, instead of a change to the content and the status of the treaties, in order to maintain their value and significance, their appropriate interpretation should be promoted. Whether the *rebus sic stantibus* principle is seen as matter or translation or of modified intention, changes in the space sector have certainly occurred. The biggest change though is not the one in circumstances. What has changed significantly during the past five decades is the direct impact that space law has on space activities. Every discussion on national or international level is deems the provisions of the five space treaties as guidance and considers them conditions *sine qua non*. When these general provisions were introduced, the application of space law was limited. Only nowadays that space law calls for more consistent application, the loopholes in the existing regime are accentuated.

The Outer Space Treaty was the first internationally binding space law document and despite its drawbacks has contributed significantly to the progress of international legal theory, introducing principles such as the province of mankind, the freedom of outer space and the use of space for the benefit and in the interest of all countries. Rather than a disadvantage, the generic character of the Outer Space Treaty provisions was the factor that distinguished the Treaty for its adaptability to the changing circumstances. Not only did it manage to stand the test of time during the decades of the unprecedented technological progress, but it is currently paving the way for future regulations. To this end, the *rebus sic stantibus* doctrine can serve as an opportunity to reassess, when necessary, the significance of the space treaties to the contemporary state of space conduct, as well as to identify the weaknesses entailed in the treaties and refrain from repeating them in future legislation.

Regardless of the changes occurred in international space law, the Outer Space Treaty will remain a treaty established with the intention to set out "principles governing the activities of States in the exploration and use of outer space".