

SNAPSHOT: THE PROCESS OF CHANGE IN INTERNATIONAL SPACE LAW POLITICS

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ABSTRACT

Space law is well developed in many areas. However, one area has generally been ignored by the established international space law community. This specific issue is: to what extent does international space law prohibit or permit private for-profit (commercial) space tourism. Specifically, does international space law, as is, prohibit for-profit space joyrides, short stays in orbital hotels, longer stays in orbital or celestial hotels, and/or for-profit outer space settlements. These appear to be the proposed stages of outer space tourism. Space tourism advocates are proposing to "take off", and initiate an industry within a few years. The proffered purpose of international law, in general, and international space law in particular, is to establish rules and norms around which actor expectations can converge. Yet, the very mention of this specific legal issue tends to border along the rim of unspeakable taboo, within the international space lawmaking machinery. This specific issue must be addressed today, between the various camps of space lawyers, to stave off future conflicts.

1. INTRODUCING: INTERNATIONAL SPACE LAW ON TOURISM

To understand where the law stands on the specific issue of outer space tourism, we must first distinguish it from related issues. Then it becomes easy to see that there is no current rule of international law regarding outer space tourism. Instead, there is a lot of legal discourse and interpretation on various related points of international

space law. Space law is a very intense and difficult subject to grasp. There are many diverse, interrelated complex subject areas. In addition, issues concerning commercial outer space tourism, or commercial outer space settlement, arise in the space law literature as integral parts of other legal issues. It is very common to see an article, book or presentation start out with the subject of space tourism, and end by linking a main argument to being resolved through general debates on private property rights, space commercialization, or something else. This is problematic, since there are many areas falling within the broad umbrella of space commercialization, privatization and private property rights. For example, satellite industries, space transportation systems, launch services, remote sensing, space stations, solar energy and exploitation of resources and space minerals. To a great extent, these industries have prompted specific lawmaking activities from within the international space law community¹. This has not happened with commercial space tourism or space settlement. Instead there is a body of discourse attempting to prove space tourism as a practical industry, along side a body of discourse arguing that international space law must be changed to encourage investment in these new industries. In unproved fields of outer space development, international space law is still vague. As such it is subject to varying interpretations, since no authoritative interpretation has been mandated by the

UNCOPUOS². Regarding these proposed industries, there are no specific bodies of law. There are only piles of discourse. Yet, language tends to reflect political and legal situations and can indicate impending change. It also has the power to trigger change, or to maintain the status quo. This capacity to exercise power by the use of language depends on the actors, and on timing. We must view "action" as shaped by international structural eras. The current structural era might best be described as the Post Cold War era wherein the logic of capitalism is far less challenged. This structure shapes regimes, norms, and international lawmaking activity.

1.1 Is Tourism: An Emerging Regime?

Space tourism seems to have begun. It's hard to tell this by looking at the discourse on international space law. Although numerous scholars make note of the various gaps between international space law and commercial realities³, the specific legal issue of to what extent does international space law prohibit or permit private commercial (for-profit) space tourism, has not been formally addressed by the mainstream international space law community⁴. In spite of this, the topic pops up more and more⁵, and many are seriously determined to make space tourism a viable industry⁶. The space tourism advocates are proposing to "take off", and initiate an industry within a few years. Yet, the very mention of this specific legal issue tends to border along the rim of unspeakable taboo, within the international space lawmaking machinery. This specific issue must be addressed today to stave off future conflicts. Specifically, does international space law, as is, prohibit Phase I, Phase II and/or Phase III of space tourism. Travel in space used to be only for government astronauts. Some believe that stage one of space tourism has already started since others are beginning to

go and to think about going into space - just to see it. Ideology has been deployed, creating new public perceptions of space access as now open to everyone. On the ground theme parks, space camps, and zero gravity flights already exist and are popular⁷. A space launch infrastructure and facilities exist and is constantly developing. The International Space Station has been a success. It has demonstrated that humans can live and work in a human space settlement. Spaces vehicles are in the process are being improved dramatically. Notwithstanding these accomplishments, many technological kinks will have to be worked before we can solely blame the law - or lack thereof - for inhibiting commercial space tourism. Still shouldn't the law precede any technological kickoff?⁸

2. INTERNATIONAL LAW'S PURPOSE

The above situation stands in direct contradiction to established perspectives on the very nature and purpose of international law⁹. Yet, a pattern has been established wherein international space law seems to be created after space industries take a foothold - not before. International space law, like international law, according to traditional theories, is supposed to create norms and rules so that international actors understand and comply with expectations and agreements. Herein, this is not the case. We see international space law playing catch-up to political moods. The result has been perpetual vagueness. The purpose of international space law, as Manfred Lachs informs, was to be classified as international law, "known to all of us as the system of law that has for centuries been regulating relations among States".¹⁰ In addition, Lachs states "the law of outer space can and should, make a notable contribution: by becoming a staunch guide to man in his journey through time and space; by securing that the great achievements of science and

technology serve the cause of international peace and security, the interest of men and nations". Similarly, Levi¹¹ explains the importance of predictability in the behavior of society's members.

3. PRIVATE PROPERTY RIGHTS

Within the international space law discourse, there is an issue that keeps creeping up - the issue of private property rights in outer space. There is an ongoing debate over whether international space law permits or prohibits private property or ownership rights to outer space resources¹². Often quoted is Article II of the Outer Space Treaty¹³ which states: "outer space, including the Moon and other celestial bodies, is not subject to national appropriation [emphasis added] by claim of sovereignty, by means of use or occupation, or by any other means." Many space law interpreters will cite Article II in support of the argument that international space law permits private property rights because it does not explicitly prohibit them¹⁴. This argument is often intermingled with the contradictory argument that since the Outer Space Treaty does not explicitly mention private appropriation, there is legal uncertainty. This uncertainty is said to create disincentives to private commercial sector investment in space endeavors¹⁵.

In taking this position, some argue that previous drafts distinguished between national and private appropriation and prohibited both, and that the final draft only contains explicit prohibition against national appropriation. Therefore, they assume that a decision must have been made to permit private appropriation¹⁶. This assumption overlooks the way in which politics can result in purposeful decisions not to decide on issues involving an ideological or philosophical impasse.

Other space law interpreters will argue that "appropriation" of outer space

resources, by any entity or individual, strictly is prohibited¹⁷. They argue that the term "national appropriation" includes all forms of appropriation whether national, private or otherwise. Some taking this position, include the very concept of private property rights as "appropriation". However, this seems to depend on the current status of the activity or industry, in the public mind.

This issue of whether or not private property rights are permitted is a source of hot debate. So what! Debate is one thing, hard black letter law is quite another. And, there is no clear legal rule of law with respect to this particular issue. Addedly, there is further lack of consensus on how space law interpreters are to interpret various issues related to the extent to which private property rights are (or are not) permitted in accordance with international space law.

Stepping away from this tree and taking a birds' eye view of the forest, we can see that the field of policy studies offers tremendous insights. By viewing this legal situation through a policy studies lens, and borrowing concepts from this field of study, we can see that "discourse coalitions" and "rhetorical troupes"¹⁸ are in place and at work selecting and using specific language linked to larger more established narratives. Space law authors, in criticizing and defending various perspectives, are writing for a purpose. This purpose is to persuade readers to subscribe to particular worldviews or discourse coalitions, where possible. For example, Fischer and Forester (1993: 1) argue that it is more realistic to see exercises in policy analysis and planning as actors engaged in "representing reality and being necessarily selective. As such they are tied to relationships of power, agenda setting, inclusion and exclusion, selective attention, and neglect". This framework enables us to understand the process described in this paper. The space law literature reflects a

tendency to make arguments rely on metaphor, metonymy and irony in staking out certain sides of these ideological debates. This involves the process of argument, framing problems, constructing problems and constructing values. This literature contains footprints of the process of ignoring, oversimplifying, criticizing and pointing blame. Space law interpreters commonly use metaphor, metonymy and irony in attempting to make their points seem like the correct interpretation of international space law. As such, the process as described amounts to political exercises of power through discursive practices in an attempt to achieve partisan results¹⁹. If the space law community would view the activities resulting in the space law literature under this lens, perhaps we could get to a meaningful discussion on this issue.

3.1 The Common Heritage of Mankind²⁰

The CHM principle is treated as an integral part of the private property rights debate. Although there is support for the Common Heritage of Mankind (hereinafter referred to as CHM) principle²¹, there is a chorus of argument complaining that international space law inhibits commercial development of outer space²². Some space law interpreters argue that space law's flaw is its uncertainty on the issue of private property rights²³. Within this discourse, some are placing blame on the Outer Space Treaty²⁴. Others are blaming the CHM principle²⁵. Still others point the blame, for the CHM principle, on "developing countries"²⁶. No matter the reason, this chorus chants the general complaint that defects in international space law create investor uncertainty, and therefore inhibits or prevents commercial space development.

This argument does not make sense for several reasons. First, the Outer Space Treaty (the backbone of international space

law) (international politics is the brain of international space law) does not contain the CHM language. Instead it uses the term *Province of Mankind*, which, is open to varying interpretations. It is vague. Second, The Moon Treaty is not generally considered accepted international law, therefore, how can it be responsible for inhibiting commercial space development. While the Outer Space Treaty does not contain the CHM, The Moon Treaty does. Specifically, The Moon Treaty has only been signed and ratified by a handful of nations²⁷. This lack of international acceptance was primarily due to the CHM concept. The Moon Treaty also contains specific language about what nations could not do. There is a steady stream of discourse launching an ideological attack on the CHM principle²⁸. Many view The Moon Treaty as meaningless due to the general lack of international acceptance. In spite of this there is still much debate within the literature. The constant addressing of The Moon Treaty within the space law literature seems to contradict the perspective that The Moon Treaty is null and void. Thirdly, commercial development of outer space is not inhibited by international space law. There are many thriving commercial space industries operating within the confines of international and domestic space law. Many of the complaints against the CHM principle are fueled by an underbelly narrative implying that the issue is one of developing countries who are against private property, versus developed countries who are for private property²⁹. This assumption is inaccurate. In reality, this is not a good description of the discourse conflict. For example, the US, as a state actor (as I understand it) has taken the policy position that the Outer Space Treaty should remain untouched. Then again, the CHM principle is not contained in the Outer Space Treaty. Still, the point is that not all developed

countries feel that international space law is defective. In addition, various space law interpreters within the developed countries also take the positions ascribed to developing countries, and vice versa. Also a number of countries labeled as developing are participating in commercial outer space activities.

3.2 Space Tourism: An Issue Distinct from the General Issue of Commercialization

Many of the established space law authors will not address the topic of space tourism. Many have addressed the general issue of private property rights. Within this particular discourse, there is the tendency to treat private property rights as being synonymous with space commercialization. In order to highlight the issue of international space law, as it relates to for-profit space tourism or for-profit space settlement, it has to be examined as a specific legal issue - isolated from the issues of space commercialization and private property rights. Space commercialization has become generally accepted by the international community. There are several space industries which have officially gone through the process of becoming commercialized and privatized,³⁰ with the support and backing of the international law-making machinery. Strategic, targeted, specific agenda-setting activities occurred in order for these shifts to occur. Again, examples include communications satellites, direct television broadcasting industries, and remote sensing space transportation and private launch services³¹. Over time, more nations and more private companies became key players in the market. After 1980, there was an increase in domestic regulations governing space activities. The U.S. was the leader in this trend wherein domestic laws began to guide space ventures. Other nations have begun to do the same. Today, for example, the U.S. commercial space

transportation industry is composed of a variety of private entities such as major aerospace firms and a multitude of other viable business entities and entrepreneurs engaged in space related businesses³².

In order to understand the politics of international law, we must acknowledge that both processes and structures are at work, shaping interpretations and outcomes. For instance, the Post Cold War distribution of power seems to be shaping state behavior, and institutional response in many international treaty conventions. In international space law, we see a shift, after 1980, away from the international law-making arena to the reliance on domestic laws. What I see as the first era, was one where visionaries and dreamers wrote about what may happen one day if outer space was ever developed³³. What I see as the second era, from 1957 to 1979, might be characterized as one wherein two superpowers dominated the shaping of international space law³⁴. The process of creating international space law during this era involved the satisfying of two main state actors - the United States and the former Soviet Union. Space law actors during this era seemed to act out of sheer fear³⁵. During this period, the United Nations was invited to act as the middleman between the two superpowers articulation of fears and aspirations, and the Committee of Peaceful Uses of Outer Space was established. In addition, other states were involved in providing input and suggestions regarding wording contained in what eventually became The Outer Space Treaty of 1967. This was the most fruitful period of international space law making. It was during this period that the five space treaties were negotiated and drafted. The United States and Soviet Union signed and ratified the first four.

The turning point for the third era came in 1979-1980. In 1979 the Moon

Treaty³⁶ was stillborn into the next new era of space law. The dominant international mood went from one of international cooperation (prompted by fears of what the superpowers might do) to a new mood of international apathy and lack of trust in international institutions by the dominant military and political superpowers. The new mood swing was the notion of self-reliance and a shift to domestic lawmaking abilities. This mood was intertwined with a global shift towards the spread of free market economics. Within the space arena, there was the development of the Space Shuttle, a massive shift from national space programs to commercial space development, and wider access to space by an ever-increasing number of other nations and private entities. Space development became more a matter of capitalist economics rather than the prior focus on accomplishments of science, military power and national prestige. Bills, laws and policies began to encourage commercial space development. We also see during this era, unprecedented amounts of international cooperation even among former political adversaries in commercial space development projects. Commercial space endeavors were becoming big business.

The fourth era of space law began around the end of 1991, during a period that some refer to as the "fall of communism". I view this era as a part of a continuum related to eras described above as 1-3. During this Post Cold War era we see an escalation of the logic of capitalist economics becoming more of an influential factor in the re-shaping of international law. It is challenged less today than ever before. Within the context of this era, we can see a mounting of space law discourse arguing: international space law should be changed since it does not clearly establish private property rights in outer space. Those arguing this line of discourse tend to reason that international

space law inhibits private investment and certainty, and therefore inhibits commercial outer space development.

The widespread acceptance of space commercialization does not apply to all imagined uses of space. Whether or not a specific space industry is viewed as acceptable by a critical mass is determined by, and in turn determines, whether or not it will benefit from a favorable interpretation of international space law. Even better, if a critical number of members of the space lawmaking machinery decide to make the determination that a specific industry has a mental green light, this tends to prompt specific international laws - tailored to suit the promotion of that industry. However, in order for an industry to warrant this type of treatment, it has to prove itself. It has to be seen as providing valuable material benefits to a significant number of relevant populations. In the current international structure there seems to be a pervasive acceptance of an ideology backed by the logic of capitalist economics. This seems to be the growing global norm. If an industry can be perceived as capable of providing the material bottom line (material sustenance, employment, income, valued goods and/or services, lucrative investments and so on), then it stands a chance of being placed on the international space law-making agenda. Policymakers understand that they are eventually accountable to various publics and that these people are primarily concerned with food, a home, paying bills, day-to-day necessities, comfort, education, medicine, entertainment, transportation and other aspects of maintaining themselves and their families. The Internet, cell phones and cable television have become key goods and services that many people value. The industries involved in providing these goods and services, also provide a multitude of jobs and have become a very real source of income for many people. In other words,

they have proven themselves. Commercial Space tourism and Commercial space settlement have not. And, there are still enormous risk factors and a lack of technology involved with these industries. Perhaps, these are the real reasons that international space law, as it applies to these industries, is still covered with a cloak of vagueness and confusion.

4. INTERNATIONAL STRUCTURE

Many theorists have indicated that international law is shaped by and shapes international politics³⁷. International space law certainly fits this description and has since its inception³⁸. It was molded by the international political structure in place at the time of Sputnik's debut. Actual concrete lawmaking for space didn't manifest until after Russia had proven the technological hurdle of satellite circumnavigation. Analyzing the activity in the development and codification of international space law within the United Nations from 1957 to 1969, Hager³⁹ argues that the only way to understand the development of space law is to understand it as a function of international politics. The basic foundation of international space law exists in the five (arguably four)⁴⁰ international space treaties. The main one being The Outer Space Treaty of 1967 ("The Constitution"). These treaties were purposefully left vague, especially the Outer Space Treaty. Commercial development issues were thought best left up to each nation's ability to draft their own domestic laws governing such activity. So, here we are today. In the midst of space tourism without a clear understanding of what the rules, norms and laws are. The space law literature is full of conflicting interpretations and arguments. Other than established, proven space industries, there's no international consensus and no specific international legislation, on to what extent for-profit, commercial ventures are allowed.

This makes sense in light of the vagueness of the core guiding principles of general international space law. Considering international treaties, declarations, resolutions and customary international law, it is generally understood that there are two ruling principles: "non-appropriation" and "freedom of use". Space law does specify whether non-appropriation is to be given more deference than freedom of use or vice versa. To complicate things further, both principles are to be interpreted under the umbrella of being for the "benefit all mankind"⁴¹. None of these three controlling principles are defined. Even worse, there are varying interpretations among the space law experts on how they should, be defined. Contrary to current criticism, this vagueness was not due to poor draftsmanship or lack of foresight into future space activities. Rather, vagueness was brilliantly and artistically built in, for acquiescence. In other words, it was the result of political compromise⁴² influenced by the belief that the specifics of future commercial interests was thought to be best left to a future date when it would be more relevant so as not to risk the pressing concern of that time – preventing colonization of outer space and military installations on the Moon by the superpowers. The international community's primary focus, at that time was to get the US and Russia to sign, at the expense of vagueness.

Some space law interpreters when asked the question: "Does international space law allow private property rights?", might answer: "Yes. It certainly does". They may even point to examples of established industries wherein such rights have been routinely granted. For example, they may explain how the telecommunications, satellite or commercial launch industries provide private property rights. However, if you were to ask this same space law expert whether this legal interpretation extends

over into the field of space tourism or commercial space settlement, they may answer sharply "no". Most will not extend this interpretation over into the realm of space tourism. This glitch in the law is problematic. While many space lawyers view the concept of space tourism as nonsense, hogwash, or worse, there are many serious space tourism actors gearing up and taking steps toward the formation of a new industry. To reiterate, space law actors who might answer in the affirmative to the general question of whether private property rights are permitted at all, may completely change their opinion after the point of reference is clarified to pertain to private for-profit space tourism or private for-profit space settlement.

CONCLUSION

Space entrepreneurs are thinking one way, depending on their link to particular industries, and space lawyers are thinking another way, depending on their link to the United Nations COPUOS, academia, industry, business and/or government. Academics are thinking, writing and speaking in other ways - legitimate professional interpretations of what is permitted or prohibited is subject to these varying interpretations. Socialization mechanisms and processes within various national boundaries produce differing views on what is equitable or sensible on how space law should be applied to commercial outer space activities and adventures. The problem addressed herein is something that the space law community knows about. Numerous scholars have commented on the way international space law and policy tend to lag behind "serious questions"⁴³, since the beginning. Taking a snapshot of international space law shows that the state of flux is really just a step in the *de lege ferenda* process. The time has come to take the next step - bridging the gap between the

different epistemic communities of space lawyers. The various camps of space lawyers must begin systematically conferring with each, other instead of past each other. This is especially true on issues of ideological impasse. Ignoring that potential conflicts exist is sometimes politically necessary. However, this issue of commercial space tourism must be brought to the agenda table today.

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- ¹ See generally A.S. Piradov, *International Space Law* (Honolulu, Hawaii: University Press of the Pacific, 2000); Bin Cheng, *Studies in International Space Law* (Oxford, New York: Clarendon Press, 1997); George V. d'Angelo, *Aerospace Business Law* (Westport, CT: Quorum Books, 1994); Peter D. Nescos, (1991) "Commercial Space Transportation: A New Industry Emerges", *XVI Annals of Air and Space Law*, 393; Jonathan F. Galloway, *Politics and Technology of Satellite Communications* (Lexington, Massachusetts: Lexington Books, 1972).
- ² At present, international space law-making is facilitated by COPUOS; it was established by UN General Assembly Resolution No. 1472 (XIV) in 1959. For a detailed analysis and explanation of the UN's role in international space law-making and on the UN's role as primary organ for the development and creation of international space law see Nandasin Jasentuliyana *International Space Law and the United Nations* (The Hague, The Netherlands: Kluwer Law International, 1999).
- ³ Detailed discussions regarding space commercialization seem to apply only to fields such as remote sensing, direct broadcasting and telecommunications satellites, space transportation systems, launch services, space stations, and to some extent solar energy and exploitation of resources and space minerals. For further reading see Stephan Hobe and Jana Kristin Hettling (2002) "Challenges to Space Law in the 21st Century - Project 2001 Plus" in *Proceedings of the 45th Colloquium on the Law of Outer Space*; Karl-Heinz Böckstiegel (November, 1988) "Space Law-Changes and Expectations at the Turn to Commercial Space Activities" No. 8 *Forum Internationale*, 1-28; Susanne Reif (1999) "Project 2001: Shaping a Legal Framework for the Commercial Use of Outer Space" 15 *Space Policy*, 109-112; Bin Cheng, *Studies in International Space Law* (Oxford, New York: Clarendon Press, 1997); George V. d'Angelo, *Aerospace Business Law* (Westport, CT: Quorum Books, 1994); Dorinda G. Dallmeyer and Kosta Tsipis, *Heaven and Earth: Civilian Uses of Near-Earth Space* (The Hague: Kluwer Law International, 1997); Tanja L. Zwaan and Walter W.C. de Vries, Paul Henry

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⁴ For example, Stephen Doyle (1992) "Legal Aspects of Space Commercialization" in Nandasiri Jasentuliyana's *Space Law: Development and Scope* (Westport, Connecticut: Praeger, 1992), Chapter 10; Carl Q. Christol, *Space Law: Past, Present, and Future* (Deventer, The Netherlands: Kluwer Law and Taxation Publishers, 1991).

⁵ At numerous conferences, symposia and the like, around the globe, presenters are increasingly presenting on the topic of space tourism. For example, the following presented at the ISU symposium in 2002: Jim Benson, "The Role of the Private Sector/Entrepreneur in Future Human Space Exploration" p. 217-222; R.A. Goehlich "Economic and Technical Evaluation of Suborbital Spaceflight for Space Tourism" p. 223-230; A. P. Bukley and W. Mendell "Space Tourism - From Dream to Reality" p. 231-238; and I. Bouvet "Space for Entrepreneurs and Tourists: Some Legal Issues" p. 239-246, see the Proceedings of the International Space University's 7th Annual Symposium, 4-7 June, Strasbourg, France entitled "Beyond the International Space Station: The Future of Human Spaceflight" (Dordrecht: Kluwer Academic Publishers, 2002). Similarly many presentations on space tourism were made at the World Space Congress in 2002, in Houston Texas as well as many other conferences around the world.

⁶ Paula Berinstein, *Making Space Happen: Private Space Ventures and the Visionaries Behind Them* (Medford, New Jersey: Plexus Publishing, Inc., 2002); U. Apel (1997, November) "Space Tourism - a Promising Future?" *Space Policy* 13:4, pp. 279-284; Tom Rogers (1998, May) "Space Tourism: A Response to Continuing Decay in U.S. Civil Space Financial Support" *Space Policy* 14:2, pp. 79-81.

⁷ See *Ad Astra* (May/June, 2002) at 6.

⁸ This is the sort of thing Andrew Haley (1958) warned about in "Space Law: Recent Practical Achievements", presented at the *American Rocket Society 13th Annual Meeting*, Hotel Statler, New York, N.Y. November 17-21.

⁹ For an outline on existing theories and interpretations on the nature and purpose international law with implications for space law, Nandasiri Jasentuliyana, *Perspectives on International Law* (London, U.K.: Kluwer Law International, 1995).

¹⁰ Manfred Lachs, Warsaw & The Hague, "The Law-Making Process of Outer Space" in Edward McWhinney and Martin A. Bradley (eds.) *New Frontiers in Space Law* (A.W. Sijthoffs, Leyden & Oceana Publications, New York, 1969), pg. 13.

¹¹ Werner Levi (1976) *Law and Politics in the International Society* (Sage Publications, Inc.: California & London) pg. 7.; See also Lasswell, H. (1963) "Politics" *Who Gets what, When, How* (Cleveland, Ohio: World Publishing); Lauterpacht, H. (ed.) *Annual International Law Reports* (London: Butterworth, 1970) *Private Law Sources and Analogies of International Law*. Hamden, Conn.: Archon Book, *The Development of International Law by the Permanent Court of International Justice* (London: Longmans, Press, 1934) and *The Function of Law in the International Community* (Oxford, England: Clarendon Press).

¹² Kelly M. Zullo (2002) "The Need to Clarify the Status of Property Rights in International Space Law" Volume 90 *The Georgetown Law Journal*, 2414 at 2424-2425; Virgiliu Pop (November 2000) "Appropriation in Outer Space: The Relationship Between Land Ownership and Sovereignty on the Celestial Bodies" Volume 16: Issue 4 *Space Policy*, 275-282; Nicolas Mateesco Matte (1984) "Space Activities and Emerging International Law" Report of a major research conducted by The Centre for Research of Air and Space Law, McGill University, p. 279-281.

¹³ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 (The Outer Space Treaty of 1967).

¹⁴ Pat Dasch, Michael Martin Smith, and Anne Pierce Director of Programs, National Space Society (1999) "Conference of Space Property Rights: Next Steps", p.174-178 and Wayne White, Jr. "Implications of a Proposal for Real Property Rights in Outer Space" p. 366-372, *Proceedings of the 42nd Colloquium on the Law of Outer Space*.

¹⁵ *Id.*

¹⁶ Wayne White, Jr. "Proposal for a Multilateral Treaty Regarding Jurisdiction and Real Property Rights in Outer Space" p. 245-253, *Proceedings of the 43rd Colloquium on the Law of Outer Space, 2000*.

¹⁷ P.M. Sterns and L.I. Tennen (2002) Privateering and Profiteering on the Moon and Other Celestial Bodies: Debunking the Myth of Property Rights in Space" World Space Conference Paper No. COSPAR 02-A-01933, Houston Texas, October, 2002; Sylvia Ospina (2002) "The Concepts of Assets and Property: Similarities and Differences, and their Applicability to Undertakings in Outer Space", *Proceedings of the 45th Colloquium on the Law of Outer Space*; Arnel Kerrest (2001) "Outer Space: Res Communis, Common Heritage or Common Province of Mankind" *Proceedings of the 10th ECSL Summer Course on Space Law and Policy*, University of Nice, France (August 27 - September 8, 2001).

¹⁸ These terms are used respectively by Maarten A. Hajer in "Discourse Coalitions and the institutionalization of Practice: The Case of Acid Rain in Britain", pp. 43-76 and J.A. Throgmorton in "Survey Research as Rhetorical

Trope: Electric Power Planning Arguments in Chicago", pp. 117-144 in Frank Fischer and John Forester (eds.) (1993) *The Argumentative Turn in Policy Analysis and Planning* (Durham and London: Duke University Press, 1993).

¹⁹ *Id.*; also see Deborah Stone, *Policy Paradox and Political Reason* (Glenview, Illinois: Scott Foresman, 1988).

²⁰ Unlike the indirect reference to the Common Heritage doctrine in the Outer Space Treaty, the Moon Treaty explicitly designates The Moon and its natural resources as part of the CHM. The CHM doctrine was derived from the Roman law concept, *res communis*, which states that certain property shall be treated as community property - it cannot be owned by any person(s), state, any other entity or combination of entities. See Heim at note 29.

²¹ Maurice N. Aדם (1999) "Twentieth Anniversary of the 1979 Moon Treaty: The Legal Status of the Moon and Other Celestial Bodies Revisited in the Light of the Commercialisation of Outer Space Activities", *Proceedings of the 42nd Colloquium on the Law of Outer Space*, 383-392; also see Rana, Harminderpal Singh (Fall, 1994) "The 'CHM & The Final Frontier: A Revaluation of Values constituting the International Legal Regime for Outer Space Activities" Volume 26 *Rutgers Law Journal*, 225.

²² Twibell, Ty S. "Space Law: Legal Restraints on Commercialization and Development of Outer Space." *University of Missouri at Kansas City Law Review*. 65 Spring 1997, 589; Ty S. Twibell (1997) "Circumnavigating International Space Law" Volume 4 *ILSA Journal of International and Comparative Law*, 259.

²³ Kelly M. Zullo (2002) at note 12; Glenn H. Reynolds (1992) "International Space Law: Into the Twenty-First Century" Volume 25: No. 2 *Vanderbilt Journal of Transnational Law*, 225 and in (February, 1990) "Laying a Legal Foundation for Space Development", *Ad Astra* at 30 argues that international space law inhibits commercial development due to the uncertainty posed by the lack of clarity on the issue of private property rights. Some authors suggest that space law be changed to explicitly permit land grants to encourage outer space settlement. For example, Glenn H. Reynolds (Summer, 1992) "Environmental Rights and International Peace" Volume 59 *Tennessee Law Review*, 723. It is important to note that the land grant concept more probably would fall into the forbidden realm of "appropriation" as opposed to the permissible category of "use". However, this is just a guess.

²⁴ Robert Zimmerman (July-August, 2000) "Brave New World?: American Colonial History as a Guide to Building Space Societies", *Ad Astra* 32-34; Berkley, Richard. "Intellectual Property issues in East Asia Proceedings of the 1997 Symposium: Article and Comment: Space Law Versus Space Utilization: The Inhibition of Private Industry in Outer Space." *Wisconsin International Law Journal*. 15 Spring, 1997, 421; Risley, Lawrence L (1998) "An Examination of the Need to Amend Space Law to Protect

the Private Explorer in Outer Space." *Western State University Law Review* 26: 47.

²⁵ Cook, Kevin V. (Spring, 1999) "The Discovery of Lunar Water: An Opportunity to Develop a Workable Moon Treaty" Volume 11 *Georgetown International Environmental Law Review*, 647 provides over 70 pages of text detailing various reasons international space law is defective; Husby, Eric (1994) "Sovereignty and Property Rights in Outer Space" Volume 3 *Journal of International Law and Practice*, 359 also argues that space law is defective, for various reasons; Heidi Keefe (July, 1995) "Making the Final Frontier Feasible: A Critical Look at the Current Body of Outer Space Law" Volume 11 *Computer & High Technology Law Journal*, 345.

²⁶ Brian M. Hoffstadt (December, 1994) "Comment: Moving the Heavens: Lunar Mining and the 'CHM' in the Moon Treaty", Volume 24 *UCLA Law Review*, 575.

²⁷ See note 40.

²⁸ For further reading see Edythe Weeks (May-August, 2001) "Continuing Pattern of Inequality Between North and South in Outer Space" Volume 79: No. 2 *Revue de Droit International De Sciences Diplomatiques et Politiques* 167.

²⁹ See Barbara Heim (1990) in "Exploring the Last Frontiers for Mineral Resources: A Comparison of International Law Regarding the Deep Seabed, Outer Space and Antarctica", Volume 23 *Vanderbilt Journal of Transnational Law*, 819.

³⁰ See note 1.

³¹ George V. d'Angelo, *Aerospace Business Law* (Westport, CT: Quorum Books, 1994).

³² For example, in the US, domestic laws and policy statements have encouraged privatization of the space transportation industry. The Commercial Space Launch Act of 1984 regulated private space transportation in the US. Prior to this, it was fragmentary and inconsistent. In 1984, the Department of Transportation was designated the lead agency for commercial launch activities. And other similar policy statements followed. For instance, the National Space Policy (1989), the Commercial Space Launch Policy (1990), the Commercial Space Policy Guidelines (1991), and the National Launch Strategy (1991) see Nathan C. Goldman *American Space Law: International and Domestic 2nd ed.* (San Diego, California: Univelt, 1996); Patrick Salin (June, 2002) "An Overview of US Commercial Space Legislation and Policies - Present and Future" *Air and Space Law*, Volume 27: 3.

³³ See Stephen E. Doyle (2002) *Origins of International Space Law and the International Institute of Space Law of the International Astronautical Federation* Univelt, Incorporated: San Diego, California); Howard E. McCurdy. *Space and the American Imagination* (The Smithsonian Institution Press, 1997).

³⁴ Von Bencke, M. J. (1997). *The Politics of Space: A History of U.S. - Soviet/Russian Competition and Cooperation in Space*. Boulder, Colorado: Westview Press.

³⁵ See Hager (1970) at note 39.

³⁶ The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (The Moon Treaty) 18 ILM 1434, GA Res. 34/68, GAOR, 34th Session., Supp. No. 46, at 77 (entered into force July 12, 1984).

³⁷ Much has been written on the relationship between international law and international politics. See Douglas M. Zang (1991) "Frozen in Time: The Antarctic Mineral Resource convention" Volume 76 *Cornell Law Review*, 722; Anne-Marie Slaughter Burley (1993) "International Law and International Relations Theory: A Dual Agenda" *The American Journal on International Law* Vol. 87 A.J.I.L. 205; Rosalyn Higgins "Integration of Authority and Control: Trends in the Literature of International Law and International Relations" in *Toward World Order*, Richard A. Falk (1968) "The Relevance of Political Context to the Nature and Functioning of International Law: An Intermediate View, in Karl W. Deutsch & Stanley Hoffmann's (eds.) *The Relevance of International Law* 133, 142; Louis Henkin (1979) *How Nations Behave: Law and Foreign Policy* 4 (2nd Ed.); Hans J. Morgenthau (1967) *Politics Among Nations: The Struggle for Power and Peace* (4th ed.); Francis A. Boyle (1985) *World Politics and International Law*, Oran R. Young (1972) "International Law and Social Science: The Contributions of Myres S. McDougal", 66 *AJIL* 60; Harold Lasswell (1936) *Politics: Who Gets What, When, How*. Still, too few focus on the process of change within the context of political moods. For example, the US is often thought of as being against the CHM concept. This was not always the case. For example, prior to 1980, the US encouraged the "common heritage vocabulary in discussions of moon law and the Law of the Sea. This stopped with the election of Ronald Reagan" see Author Blaser (1990) Volume 5 *Journal of Law and Technology*, 79 at 89; see also Kim Elaine Rathman, (1996) *The Common Heritage Principle and the U.S. Commercialization of Outer Space*, Dissertation, Graduate Theological Union, Berkeley, California.

³⁸ C. Wilfred Jenks, *Space Law* (New York: Frederick A. Praeger, 1965).

³⁹ David Russell Hager (1970) in *Space Law: The United Nations, and the Superpowers: A Study of International legal Development and Codification, 1957-1969*, Dissertation, University of Virginia, Ph.D. Political Science, sets forth the central hypothesis that the development and codification of space law and the "nature, scope and pace" were significantly influenced by the variables of political competition and cooperation between the superpowers. Hager (1970: 8) asserts that international law is more accurately characterized as *de lege ferenda* (that which is developing to attain the objectives contemplated for it), rather than *de lege lata* (that which is established). Hager (1970: 8) explains that international law is shaped by all the elements that compose the international system and is

"reflective of the structure of the world, transnational forces, the pattern of power and the political cultures of the main actors, and the relations among the units"; also see Tanja L. Masson-Zwaan and Pablo M. Mendes de Leon (eds.) *Air and Space Law de Lege Ferenda: Essays in Honour of Henri A. Wassenbergh* (Kluwer Academic Publishers, 1992).

⁴⁰ The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (The Outer Space Treaty, 1967); The Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched into Outer Space (The Rescue and Return Agreement, 1968); The Convention on International Liability for Damage Caused by Space Objects (The Liability Convention, 1971); and The Convention on the Registration of Objects Launched into Outer Space (The Registration Convention, 1976). The questionable one is The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (The Moon Treaty, 1984). Only nine states (Australia, Austria, Chile, Mexico, Morocco, The Netherlands, Pakistan, Philippines and Uruguay) have ratified it and five states (France, Guatemala, India, Peru and Romania) in addition have signed but not ratified. It only took five nations to enter it into force, however it opened for signature on December 18, 1979 and took five years to get the five requisite signatures. Conversely, The Outer Space Treaty was well received: it was ratified by ninety-six nations and signed by another twenty-seven states. See *Report of the Legal Subcommittee on Its Fortieth Session*, UN Committee on the Peaceful Uses of Outer Space, 40th Session, 22(a), United Nations' Document A/AC.105/763 (2001) see http://www.oosa.unvienna.org/Reports/AC105_763E.pdf.

Since the Moon Treaty has garnered such a low level of international support, some space law experts have reasoned it is "obviously unacceptable". Kelly M. Zullo (2002), note 12, citing Eilene Galloway, "Guidelines for the Review and Formulation of Outer Space Treaties", Presentation at the International Astronautical Federation 41st *International Colloquium on the Law of Outer Space*, Melbourne, Australia, at 2, October 2, 1998.

⁴¹ Katrin Nyman Metcalf, *Activities in Space Appropriation of Use?* (Uppsala: Lustus Forlag, 1999).

⁴² Nandasini Jasentuliyana, *Space Law: Development and Scope* (Westport, Connecticut: Praeger, 1992) at 37.

⁴³ See, for example, Carl Q. Christol (1965) "An Analysis of Certain Policy Approaches in the United States to the Emerging Law of Outer Space, *Proceedings of the 7th Colloquium on the Law of Outer Space*, pp. 4-9; Vladimir Kopal (1997) "Some Comments on the Significance of the 1967 Outer Space Treaty for the Establishment and Development of Space Law of Our Times"; and Frans G. von der Dunk (February 1996) "The Role of Law With Respect to Future Space Activities", *Space Policy*, 5-8.