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Due Regard as the Prime Directive for Responsible Behavior in Space

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DUE REGARD AS THE PRIME DIRECTIVE FOR RESPONSIBLE BEHAVIOR IN SPACE

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Abstract

As the proliferation of space activities has rapidly accelerated, states are increasingly concerned about the lack of clear guidance for responsible behavior in space. Risks due to accident, miscalculation, or misperception abound. Thus, there have been increasing calls for the development of 'norms of behavior' for space at both the international and domestic levels. The principle of due regard, enshrined in Article IX of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies ("Outer Space Treaty" or "OST"), is an underutilized space law tool that could, if embraced, play a significant role in establishing such norms and creating a more secure, safe, and sustainable environment for space activities.

This paper appraises the value of the due regard principle to international space law from both a legal and international relations perspective, viewing norm development through a constructivist lens. It then provides an interpretation of the due regard principle in accordance with the rules articulated in the Vienna Convention on the Law of Treaties. Two specific examples of gaps in international space law that would benefit from application of the due regard principle are addressed, namely the protection of space science and the applicability of 'safety zones' in space. Finally, the paper concludes with an assessment of why due regard is the thread that holds the tapestry of international space law together, the prime directive of international space.

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I. Introduction

The Outer Space Treaty emphasizes the freedom of states to use and explore outer space as the most basic underlying principle of the international space law regime.[1] It plainly encourages the further development of peaceful activities in space, as does Resolution 1962, which preceded it.[2] The freedom of use and exploration of outer space is one that has crystallized into customary international law in parallel with the Outer Space Treaty.[3] Following the establishment of a right to use and explore, the Outer Space Treaty subsequently addresses limitations and restrictions on such use and exploration; in other words, it creates obligations to which space-faring states must adhere. Surely, the totally unlimited use and exploration of space would create conflict, increase risk, and ultimately stifle further development of space activities for any but the most ambitious and technologically advanced states. The due regard principle, an underutilized legal mechanism first articulated for space in paragraph 6 of Resolution 1962 and made binding in Article IX of the Outer Space Treaty, is a useful tool that can be employed to minimize conflict, reduce risk, and create optimal conditions for space development.

Though the primary subject of this article is found in Article IX of the Outer Space Treaty, several other provisions bear directly on the discussion of due regard. Article III acknowledges that international law still applies in space.

[1] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

[2] G.A. Res. 1962 (XVIII), Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space (Dec. 13, 1963).

[3] Ram S. Jakhu & Steven Freeland, *The Relationship Between the Outer Space Treaty and Customary International Law*" (59th Int'l Astronautical Cong., 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3397145.

So, while the Outer Space Treaty represents *lex specialis* for space, general international law is used to supplement specialized space law.[4] Additionally, Article VI establishes that states are responsible for their "national activities in outer space," including those activities carried out by corporations and other non-governmental entities.[5]

Under Article VI of the Outer Space Treaty States incur an obligation to authorize and supervise their national space activities; states must ensure their national actors comply with international space law and they are directly responsible under international law if they do not.[6] This rule is a significant departure from general international law, in which the state would otherwise be held responsible only for its own activities or the activities of agents acting on its behalf.[7] As the commercial space industry continues to develop apace, the significance of this rule cannot be overstated. Thus, when applying the due regard principle to space activities, we use the tools of international law and apply the obligation to act with due regard to the behavior of commercial space entities through their respective states.[8]

Article IX of the Outer Space Treaty contains three primary obligations.[9] These are: an obligation to act with due regard, an obligation to avoid harmful contamination, and an obligation to consult in circumstances of potentially harmful interference.

In the exploration and use of outer space, including the moon and other celestial bodies, States Parties to the Treaty shall be guided by the principle of cooperation and mutual assistance and shall conduct all their activities in outer space, including the moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty. States Parties to the Treaty shall pursue studies of outer space, including the moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose. If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with

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[4] Alan Boyle & Christine Chinkin, The Making of International Law 23-24, 252-253 (Oxford Univ. Press eds., 2007).

[5] For a detailed discussion of Article VI, *see* Bin Cheng, *Article VI of the 1967 Space Treaty Revisited*, 26 J. Space L. (1972).

[6] Outer Space Treaty, *supra* note 1, at Art. VI.

[7] G.A. Res. 65/19, Responsibility of States for Internationally Wrongful Acts, (Jan. 10, 2011), at 4-11.

[8] While the *Barcelona Traction* rule has bearing here in international law, each state has its own domestic rules to determine which space activities are permissible, and which actors must seek authorization. *See* Barcelona Traction Light and Power Company Ltd. (Belg. v. Spain), 1970 I.C.J. 3 (Feb. 5, 1970).

[9] For the distinction between primary and secondary obligations in international law, *see* Robert Kolb, *The International Law of State Responsibility: An Introduction* 6-8 (Northampton: Edward Elgar Publishing ed., 2018).

any such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, including the moon and other celestial bodies, may request consultation concerning the activity or experiment.[10]

While this paper is primarily concerned with the first such obligation, due regard, there is also a relationship with the consultation obligation.[11] The act of consultation can be a means to demonstrate regard for the interests of another State.

Article IX is the treaty provision that does the heavy lifting to balance the Article I.2 freedom of exploration and use for all states, maximizing the potential for space development and creating metaphorical room for access to space by those countries that may be less economically or technologically developed, as contemplated in Outer Space Treaty Article I.1. While practical application of the due regard principle in space law has been limited, scholars have recognized the close, balancing relationship between Article I rights and Article IX obligations.[12]

II. Context: Why Does Due Regard Matter?

In a six-year span from 2014-2020, the catalogue of operational space objects increased more than twofold and is continuing to grow at a high rate.[13] If we consider the application filings for new satellites to national regulators by early 2021, the number of new objects in orbit could be over 100,000 by 2030.[14] For space professionals, those numbers are both exhilarating and terrifying; exhilarating because of the increasing importance and viability of space development, but terrifying because the consequences and likelihood of disaster, accidental or otherwise, increase in parallel. The number of new actors and new objects in space has created a renewed push for *norms of responsible behavior* that will help to create stability in space activities and reduce the risk of mishap or misperception.

In late 2020, the UN General Assembly adopted a resolution titled "Reducing Space Threats Through Norms, Rules, and Principles of Responsible Behaviours."[15] The resolution called for states to submit their views on issues

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[10] Outer Space Treaty, *supra* note 1, Art. IX.

[11] *See infra, Ordinary Meaning: Due Regard and Disregard* below.

[12] *See*, for examples, MANFRED LACHS, THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAW-MAKING 43-45 (Leiden: Martinus Nijhoff Pubishers ed., 2010 reprint; originally 1972); George D. Kyriakopoulos, *Security Issues with Respect to Celestial Bodies*, *in* HANDBOOK OF SPACE SECURITY: POLICIES, APPLICATIONS AND PROGRAMS 2ND ED VOL II 344 (Kai-Uwe Schrogl ed., 2020),); Sergio Marchisio, *Article IX of the Outer Space Treaty*, *in* COLOGNE COMMENTARY ON SPACE LAW VOL. I: OUTER SPACE TREATY 568 (Hobe, Schmidt-Tedd, Schrogl eds., 2010).

[13] Carmen Pardini & Luciano Anselmo, *Evaluating the Impact of Space Activities in Low Earth Orbit*, 184 Acta Astronautica 11, 11 (2021).

[14] *Id.*

[15] G.A. Res. 75/36, Resolution adopted by the General Assembly on 7 Dec. 2020, Reducing Space Threats Through Norms, Rules and Principles of Responsible Behaviours (Dec. 16, 2020).

articulated in the resolution. Thirty states, the European Union, and other entities and non-governmental organizations submitted their views, which were summarized in a report of the Secretary-General.[16] The report addresses naturally occurring and human-generated threats to space activities, including a broad definition of 'threat,' encompassing both intentional threats and threats created as by-products of space activities in general, such as debris and congestion. The responses of the member states address the utility of legally binding or voluntary norms, with the majority conceding that a binding treaty is unlikely at this time. States may prefer soft law instruments because they incur fewer consequences, avoid a domestic ratification process, offer a more flexible model, and/or are easier to change or supplement.[17] In a space context, the relative failure of the Moon Agreement as compared to the relative success of non-binding instruments such as the Remote Sensing Principles and Debris Mitigation Guidelines likely also contributes to the hesitancy to develop new treaties.[18] While the Moon Agreement was introduced and opened for signature on a consensus basis, it has to date only accrued 18 ratifications, none from the major spacefaring states. In concluding observations, the United Nations Secretary-General ("UNSG") states that "[T]he normative and legal framework governing outer space is not sufficiently developed" and finds it "encouraging that Member States reaffirm that voluntary norms, rules and principles, including non-binding transparency and confidence-building measures, can form the basis for legal measures."[19]

An Open-Ended Working Group ("OEWG") on reducing space threats through norms, rules and principles of responsible behaviors was subsequently convened in 2022.[20] The OEWG concluded on 1 September 2023.[21] The OEWG draft report recognized that "all activities by States in outer space are carried out in accordance with international law including with due regard to the corresponding interests of other States."[22] Unfortunately, due to political circumstances, though the OEWG recognized the importance and relevance of the duty of due regard, "[t]he working group considered that this matter should be further discussed in the relevant forums."[23] Though the OEWG was unable to further

16 U.N. Secretary General, *Reducing Space Threats Through Norms, Rules and Principles of Responsible Behaviours*, U.N. Doc. A/76/77 (July 13, 2021) [hereinafter Report of The Secretary General].

17 Boyle & Chinkin, *supra* note 4, at 214.

18 Status of International Agreements Relating to Activities in Outer Space as at 1 January 2020, COPUOS, U.N. Doc. A/AC.105/C.2/2020/CRP.7 (2020). Executive Order on Encouraging International Support for the Recovery and Use of Space Resources. White House, https://www.whitehouse.gov/presidential-actions/executive-order-encouraging-international-support-recovery-use-space-resources/ (April 6, 2020) [hereinafter Status of International Agreements].

19 Report of the Secretary General, *supra* note 16, at ¶ 47.

20 G.A. Res. 76/231, Reducing space threats through norms, Space Threats Through Norms, Rules and Principles of Responsible Behaviours (Dec. 30, 2021); UN. OF FOR DISARMAMENT AFFAIRS, OPEN-ENDED WORKING GROUP ON REDUCING SPACE THREATS (2022), https://meetings.unoda.org/open-ended-working-group-reducing-space-threats-2022.

21 *Id.*

22 U.N.G.A., Draft Rep. of the Open-ended Working Group on Reducing Space Threats Through Norms, Rules and Principles of Responsible Behaviours, ¶ 18, A/AC.294/2023/CRP.1/Rev.1, 31 (Aug. 13, 2023).

23 *Id,* at ¶ 21.

develop a plan for implementation of the due regard principle, its recognition of the principle's importance is a valuable first step toward dusting off the underused OST Article IX provision.

States must not only agree on the substance of the norms themselves, but determine what form they will take, and establish their relationship with the existing body of international space law. I argue that the due regard principle is the underutilized tool that enables states to tie substantive, agreed-upon norms to an existing legal rule, which therefore increases their legal significance and moves toward formation of binding standards of behavior. This paper establishes both why and how due regard is an ideal mechanism for states to establish norms of responsible behavior for space.

A. What is a Norm?

In the social sciences, norms are typically "defined as rules or expectations that are *socially* enforced."[24] Thus, norms are distinct from legally enforced rules or laws. Certainly, a rule can be both legally and socially enforced and thus be both a law and a norm, such as a prohibition on theft, for example. In an international law context, "[n]orms are legally binding which fit within one of a series of doctrinally elaborated categories,"[25] namely those articulated in Article 38(1.a-c) of the International Court of Justice ("ICJ") Statute. So, if a norm does not fit into one of those categories, it can be a social norm but will not rise to the level of a legal norm.

Within the definition of norms, there is a recognition that some norms are more strictly enforced than others. Expectations would be a softer form of norms than rules. Doctrinally trained lawyers seek hard rules to analyze or interpret, but in the international space law context, legal doctrine alone is insufficient to achieve practical objectives within the limitations of the international system. Former ICJ President Rosalyn Higgins acknowledged that "international law has to be identified by reference to what the actors (most often states)...believe normative in their relations with each other" generally without confirmation by the ICJ or other judicial body.[26]

The International Law Commission (ILC) has been charged with a mission of codification and progressive development of international law; in other words, establishment of legal norms. Through the history of the ILC, there has been a consistent tension between the codification and progressive development objectives.[27] It can be challenging to identify which norms have moved beyond the realm of social expectations and crystallized into customary legal rules and those

[24] Christine Horne, "Norms", OXFORD BIBLIOGRAPHIES, https://www.oxfordbibliographies.com/display/document/obo-9780199756384/obo-9780199756384-0091.xml.

[25] David Kennedy, *The Sources of International Law*, 2 AM. U. INT'L L. REV. 1, 88 (1987).

[26] ROSALYN HIGGINS, PROBLEMS AND PROCESS: INTERNATIONAL LAW AND HOW WE USE IT 18 (Oxford: Clarendon Press ed., 1994), based on her lectures to the Hague Academy General Course in International Law.

[27] Int'l L. Comm'n, *Statute of the International Law Commission*, art. 1 (1947), https://legal.un.org/ilc/texts/instruments/english/statute/statute.pdf; Boyle & Chinkin, *supra* note 4, at 174-175.

that still remain in the realm of aspiration or *lex ferenda*. Of course, on its face, the clarifying question is simple: has there been consistent state practice and is there evidence that states believe they are legally bound to that practice?[28] Though the ILC primarily deals with questions of customary international law as articulated in this section of the paper, the issues surrounding establishment of consistent state practice are also relevant to understanding state practice in a treaty interpretation context,[29] and thus also relevant to our formulation of due regard conduct expectations under the Outer Space Treaty.

To better understand how consistent state practice develops, it is helpful to reach beyond legal scholarship and into the international relations toolbox. By providing a context based in international politics, international relations theory can add normative thinking to an otherwise narrowly constrained doctrinal approach.[30] Though international relations theory cannot itself claim to be a legal method, it can aid in the understanding of the relationship between law and governance.[31] In the context of this paper in particular, the constructivist school of thought focuses on norm creation and development and its relationship to the identities of states.[32] In the frame of constructivist theory, norms are intersubjectively developed through the interaction of states. States interests are not static and can evolve through interaction.[33] States and the international system "construct or constitute each other."[34]

International relations theory is an aid to assist in the progressive development of international law, assessing how the behavior of states can be affected toward the development of state practice.[35] This progressive development is relevant both in the context of customary international law and in treaty interpretation. Thus, when lawyers become frustrated by the state preference for soft norms rather than laws, it is helpful to look to constructivist theory to understand that the interaction between states during the development and application of norms allows an intersubjective shift in preferences so that legally binding rules become possible, regardless of which form they take in international law. To start with the due regard principle as the basis for additional norms, is starting with a foundation that has already been agreed upon since at least 1967 in the interactions between states. Thus, norms can be built upon the Outer Space Treaty, which has already been internalized by states as fundamental to responsible behavior in space.

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[28] I.C.J., *Statute of the International Court of Justice*, art. 38(1)b, 59 Stat. 1031 (Apr. 18, 1946); *see also* Continental Shelf (Libyan Arab Jamahiriya v Malta), ICJI.C.J. Reports, p. 29 ¶ 7 (1985).

[29] See *infra, State Practice* section below.

[30] Kenneth W. Abbott, *International Relations Theory, International Law, and the Regime Governing Atrocities in Internal Conflicts*, 363, 93 AM. J. OF INT'L L. 361 (1999).

[31] *Id.* at 379.

[32] *See* Ted Hopf, *The Promise of Constructivism in International Relations Theory,* 23 INT'L SECURITY 171-172 (1998).

[33] Abbott, *supra* note 30, at 367.

[34] Gavan Duffy & Brian Frederking, *Changing the Rules: A Speech Act Analysis of the End of the Cold War,* 53 INT'L STUD. Q. 325, 330 (2009) (*citations omitted*).

[35] Abbott, *supra* note 30, at 363 (*citations omitted*).

B. What Value Can Norms Add in an International Law Context?

In both a practical and constructivist sense, international law "is what states make of it."[36] Recent decades have seen an upswing of views that erode the value of international law even beyond narrowly construed positivism. This shift is grounded in a New Realist theory of international relations that sees international law simply as another expression of the interests of powerful states.[37] In this view, rules of international law can only be found and applied where there is incontrovertible evidence of state consent, and even then, sufficiently powerful states will break these legal 'rules' when they no longer serve the state's interest.[38] In this view, "rational self-interest and *opinio juris* are mutually exclusive" because states are justifying their self-interest in a guise of obligation, but will ultimately change their behavior if it suits their interests.[39] Though it is unfortunate, this weakening of international law as illusory or "not real law" is a striking example of law professors having a tangible effect on the practice of states.[40] It is a both a stark warning about the power of the legal academy and a heartening demonstration that those of us in this profession have a role to play beyond mere theoretical applications.

With the political realities of the 21st century, a scholar wishing to influence state policymakers cannot abandon legal positivism. That said, it is possible to take what is called an "enlightened positivism" approach that maintains focus on formal sources of international law and seeks proof of state commitment, but recognizes "changes in patterns of state behavior and wider methods of determining state consent and evidence of that consent."[41] It is from that perspective that this paper tackles the due regard principle as a tool for implementing norms of responsible behavior.

States wishing to reinforce or develop identities as space powers can be induced to take a significant role in the formulation of norms in accordance with that identity. When a norm comes into practice, prior negotiation means the state is less likely to detract from that rule because its national interests have become entangled with it.[42] Of course, in reality state interactions do not always play out this way – for example, the U.S. played a key role in the negotiating the Moon Agreement, but never ratified the treaty and have since spoken out against it.[43]

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[36] *See* Alexander Wendt, *Anarchy is What States Make of It: The Social Construction of Power Politics*, 46 INT'L ORG. 391 (1992).

[37] JACK L. GOLDSMITH & ERIC A. POSNER THE LIMITS OF INTERNATIONALINT'L LAW (Oxford Univ. Press 2005) at 3; JENS DAVID OHLIN, THE ASSAULT ON INT'L LAW (Oxford Univ. Press 2018) at 8-10, 12-14, 189.

[38] Abbott, *supra* note 30, at 365; *Citing* HANS MORGENTHAU, POLITICS AMONG NATIONS: THE STRUGGLE FOR PEACE AND POWER (New York Knopf 5th ed. 1978); Ohlin, *supra* note 37, at 9-10.

[39] Ohlin, *supra* note 37, at 145, 147.

[40] *Id.* at 43 *generally citing* Goldsmith & Posner, *supra* note 37.

[41] Boyle & Chinkin, *supra* note 4, at 12 *citing* Bruno Simma & Andreas L. Paulus, *The Responsibility of Individuals for Human Rights Abuses in Internal Conflicts: A Positivist View* 93 AM. J. OF INT'L LAW 302, 302-303 (1999).

[42] *See* Hopf, *supra* note 32, at 176.

[43] Status of International Agreements, *supra* note 18.

A state is much less likely to take a norm seriously if it does not participate in the norm's development, as it will likely identify as an outsider with regard to that norm. The Artemis Accords[44] frequently receive the criticism that they were unilaterally developed by the United States and therefore are less likely to become accepted among all significant space powers.[45]

For rule-oriented constructivists, communicatively rational agents interact within an intersubjective structure of social rules. Agents perform speech acts that convey validity claims, including evaluations of the validity claims of others. As actors repeat sequences of speech acts, regularities emerge. Over time, actors come to consider these regularities to be practices, for which they might eventually develop norms and even codify rules.[46]

Additional opportunities to perform such speech acts, such as participating in a negotiation and drafting process, provide additional opportunities for intersubjective development of rules.

As an obligation of conduct, the due regard rule provides unique opportunities to create supplemental conduct norms that can become legally binding through the intersubjective development of the due regard principle itself.[47] In this sense, it is important to give appropriate substance to any future norms crafted as representations of responsible behavior carried out with due regard to ensure a "norm-creating character."[48] Thus, norms that are codified should use language that demonstrates commitment, such as 'must.'[49] These supplemental norms may begin only as social norms, but as states apply them in their interactions, a legally binding character can be acquired if states come to internalize them as obligatory, thus satisfying the *opinio juris* requirement of a customary law. In this sense, intersubjective norm development and practice under Article IX of the Outer Space Treaty can be two sides of the same coin. Norms in the form of guidelines can be used to help interpret binding commitments, this application of norms is addressed in more detail in the *Subsequent Agreements* section below.[50]

In addition to their potential relationship to treaty law, soft law instruments can be valuable methods driving the codification of customary international law, even though they are not themselves binding.[51] These instruments can focus consensus without the need for complex domestic ratification processes that can take years. Citation to and reliance on these instruments can be seen as a form of *opinio juris*. An example of a soft law instrument that may be more valuable

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[44] Artemis Accords, NASA (Oct. 13, 2020), https://www.nasa.gov/specials/artemis-accords/img/Artemis-Accords-signed-13Oct2020.pdf.

[45] Rahul Chaudhary, *Preventing Space Warfare: The Artemis Accords and What It Means for Australia*, UNITED STATES STUDIES CENTER (Feb. 7, 2022), https://www.ussc.edu.au/analysis/preventing-space-warfare-the-artemis-accords-and-what-it-means-for-australia.

[46] Duffy & Frederking, *supra* note 34, at 327.

[47] *See* Kolb, *supra* note 9, at 41-45, *citing* Roberto Ago.

[48] *North Sea Continental Shelf* (Federal Republic of Germany v. Denmark; Federal Republic of Germany v. Netherlands) I.C.J. Rep. at 43 ¶ 72 (1969).

[49] Kal Raustiala, *Form and Substance in International Agreements,* 99 A.J.I.L. 581 (2005).

[50] Boyle and Chinkin, *supra* note 4, at 183; see *infra, Subsequent Agreements* section below.

[51] *Id.* at 182.

in its form than it would have been as a treaty is the *Articles on Responsibility of States for Internationally Wrongful Acts*.[52] While conceived as a mix of codification and progressive development of international law within the ILC's mandate, they have come to be relied upon by the ICJ as legally binding. A similar phenomenon can be observed with respect to the Vienna Convention on the Law of Treatises ("VCLT"), discussed in more detail in the section *Interpreting and Applying Due Regard* below. Certainly, norms of responsible behavior for space would not rise to the level of either of these instruments crafted by the ILC, but they provide striking examples of intersubjective norm development resulting in a new *lex lata*.

III. Interpreting and Applying Due Regard

A. Pacta Sunt Servanda

Arguably the most fundamental rule in the application of treaty law, *pacta sunt servanda*, was codified in Article 26 of the Vienna Convention on the Law of Treaties, stating that "[e]very treaty in force is binding upon the parties to it and must be performed by them in good faith."[53] This rule reinforces the binding nature of treaties and the requirement that exercise of rights granted by the treaty and performance of obligations established by the treaty must be carried out in good faith; essentially without purpose for manipulation, malfeasance, and/or trickery. In other words, parties to the treaty must carry out actions under the treaty in accordance with an interpretation of its terms reached in good faith.[54] *Pacta sunt servanda* rises to the level of "a constitutional norm of superior rank" in international law and thus must not be ignored.[55] Indeed, *pacta sunt servanda* is the tool invoked by legal positivists to bind states in circumstances where they may not have expressly consented.[56]

The ICJ has affirmed that trust and confidence play a role in good faith.

One of the basic principles governing the creation and performance of legal obligations, whatever their source, is the principle of good faith. Trust and confidence are inherent in international co-operation, in particular in an age when this co-operation in many fields is becoming increasingly essential.[57]

Thus, the efficacy of treaties is reliant on the trust and confidence of states that their counterparts will act in good faith with respect to their obligations, even if those obligations may vary significantly in both form and substance.

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[52] Articles on Responsibility of States for Internationally Wrongful Acts, *supra* note 7; Boyle & Chinkin, *supra* note 4, at 182-185.

[53] Vienna Convention on the Law of Treaties, May 23, 1969, 1155 U.N.T.S. 331, art. 26.

[54] JAMES CRAWFORD, BROWNLIE'S PRINCIPLES OF PUBLIC INTERNATIONAL LAW (Oxford Univ. Press, 8th ed. 2012) at 377.

[55] OLIVER DORR & KIRSTEN SCHMALENBACH, EDS., VIENNA CONVENTION ON THE LAW OF TREATIES: A Commentary, Springer Nature, Berlin (2nd. ed. 2018) at 475.

[56] Kennedy, *supra* note 25, at 25; Boyle and Chinkin, *supra* note 4, at 14.

[57] *Nuclear Tests* (New Zealand v. France) (1974) I.C.J. Rep. 457 ¶ 49.

As the due regard principle articulated in Article IX of the Outer Space Treaty is both part of a treaty and phrased as a direct obligation "*shall* conduct all their activities…with due regard for the corresponding interests of all other States Parties" (emphasis added), it is binding.[58] The related obligation that a state "shall undertake appropriate international consultations" in the event it has reason to believe its activities "would cause potentially harmful interference with the activities of other States Parties…" is likewise binding.[59] Both inherently come with a requirement to act in good faith. It is important to note the qualified nature of the consultation obligation, however, which is not overly broad. To phrase it another way, an activity that would (*not* may) cause interference, in which that interference could potentially rise to the level of *harmful* (not simple interference), would trigger the consultation obligation. Likewise, there is no obligation to avoid the harmful interference in actuality, but merely to consult in a good faith effort to resolve it.

B. Rules of Treaty Interpretation

The purpose of treaty interpretation is to arrive at a common understanding of treaty terms that is at once obvious, logical, and effective.[60] The text of Article 31 of the VCLT has established itself as the primary tool for treaty interpretation and is widely considered to have crystallized into customary international law.[61] Though only a subsidiary source, and thus persuasive rather than dispositive, the ICJ has repeatedly confirmed the customary international law status of these interpretive rules.[62] In fact, it has been asserted that there is no instance in which the ICJ has found the VCLT does not represent an accurate depiction of customary international law in this regard.[63]

To summarize and paraphrase Article 31, treaty interpretation is conducted:

- In good faith
- In accordance with the terms' ordinary meaning
- In their context, which includes:

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[58] Raustiala, *supra* note 49.

[59] Outer Space Treaty, *supra* note 1, at Art. IX.

[60] Olivier Corten & Pierre Klein eds, The Vienna Convention on the Law of Treaties: A Commentary, Vol. I, (Oxford Univ. Press 2011) at 808.

[61] *Id.* at 817-823, 826; Boyle & Chinkin, *supra* note 4, at 191; Crawford, *supra* note 54, at 380.

[62] Territorial Dispute (Chad v. Libya), Judgement, 1994 I.C.J. Rep. 22, ¶ 41 (Feb. 3); *see also* Maritime Delimitation in the Area between Greenland and Jan Mayen (Denmark v. Norway), Judgement, 1993 I.C.J. Rep. 50, ¶ 26 (June 14); Maritime Delimitation and Territorial Questions between Qatar and Bahrain (Qatar v. Bahrain), Judgement, 1995 I.C.J. Rep. 18, ¶ 33 (Feb. 15); Oil Platforms (Islamic Rep. of Iran v. U.S.), Judgement, 1996 I.C.J. Rep. 812, ¶ 23, (Dec. 12); Legal Consequences of the Construction of a Wall in Occupied Palestinian Territory, Advisory Opinion, 2004 I.C.J. ¶ 94 (July 9); Sovereignty Over Pulau Ligitan and Pulau Sipadan, 2022 I.C.J. Rep. 645, ¶ 37 (Dec. 17); Avena and Other Mexican Nationals (Mexico v. U.S.), Judgement, 2004 I.C.J. Rep. 12, ¶ 47 (Mar. 31); Application of the Conv. on the Prevention and Punishment of the Crim of Genocide (Bosnia and Herzegovina v. Serbia and Montenegro), Judgement, 2007 I.C.J. Rep. 43, ¶ 109-110 (Feb. 26).

[63] Anthony Aust, Modern Treaty Law and Practice (Cambridge Univ. Press 2000) at 11.

- The full treaty text, including preamble and annexes
- Agreements relating to the treaty by all parties connected with the treaty's conclusion
- Instruments made by one or more parties in connection with the conclusion and accepted by other parties

- In light of their object and purpose
- Taking into account
  - Subsequent agreements between the parties regarding interpretation or application of provisions
  - Subsequent practice in application that establishes interpretive agreement
  - Relevant applicable international law rules.

Here again, we see the emphasis of good faith employment of treaties re-emphasized, harking back to *pacta sunt servanda*. Good faith in treaty interpretation requires the application of a standard of reasonableness.[64] By its nature, the due regard principle relies on good faith and must be applied consistent with a reasonable assessment of a state's own national interests as well as other states' corresponding interests in space activities. Here, we see that the concerns of realists focused on state interests can be effectively addressed. The provision expressly takes state interests into account. States must consider the interests of other states and make a good faith assessment as to whether their own activities unduly infringe on the rights of those other states to exercise freedom of exploration and use of outer space. The delimitation of which interests may be considered "corresponding" under Article IX of the Outer Space Treaty is beyond the scope of this article.

C. Ordinary Meaning: Due Regard and Disregard

The prominence of ordinary meaning within Article 31 emphasizes the primacy of textual interpretation, first taking the terms used by the party at their face value.[65] The ordinary meaning in question is "what a person reasonably informed on the subject matter of the treaty would make of the terms used."[66] In the case of *due regard*, the dictionary definition a layperson might use is not markedly dissimilar from a legal application. Miriam-Webster defines 'due regard' as "with the proper care or concern for."[67] Black's Law Dictionary defines the term to mean "to give a fair consideration to and give sufficient attention to all of the

64 Dorr & Schmalenbach, *supra* note 55, at 587.

65 Corten & Klein, *supra* note 60; Dorr & Schmalenbach, *supra* note 55; Crawford *supra* note 54, at 379.

66 Dorr & Schmalenbach, *supra* note 55, at 581.

67 *Due Regard*, MERRIAM-WEBSTER DICTIONARY, https://www.merriam-webster.com/dictionary/with%20due%20regard%20to.

facts."[68] It is important to note that the level of diligence required is qualified in both definitions – *proper* care, *fair* consideration, or *sufficient* attention. Thus, there is no requirement for total or complete regard, due regard is a level of regard that is reasonable under the circumstances.

According to the *Cologne Commentary on Space Law*, due regard "refers to the performance of an act with a certain standard of care, attention or observance. The requirement of 'due regard' is indeed a qualification of the rights of States in exercising the freedoms in outer space…"[69] Scholars of international environmental law have contributed to the discussion of the ordinary meaning of due regard. One approach taken has been to contrast due regard with disregard. For example, "Disregard evinces disrespect; due regard promises respect, tempered by the reality that respect for all inevitably involves tradeoffs and judgments."[70] Thus, acting with due regard inherently implies acting without unjustified disregard.[71] The consultation provisions also provided in Article IX provide an opportunity to demonstrate *prima facie* avoidance of unjustified disregard.

Consultations are neither a "mere formality" nor a "right of veto" by the affected state.[72] If consultations are conducted in good faith and a determination is made that the harmful interference cannot be avoided, those consultations can serve as evidence that the ensuing activity would be conducted with due regard, thus the harmful interference caused could be considered justified disregard. That said, we must differentiate between the two individual obligations to act with due regard and to conduct consultations and must also understand that due regard and harmful interference can coexist in conformity with the treaty, even in a circumstance where consultations have not occurred.[73] That said, it is useful to consider the distinct but related obligations when analyzing responsible behavior.

Inherent in the principle of due regard is a balancing test that maximizes the rights of states to use and explore space while attempting to minimize – but not completely eliminate – harmful interference. Put more simply, due regard is *optimal* regard; an optimized standard to allow the overall maximal use and exploration of space by all parties.

Some scholars have characterized the due regard principle to be too vague or ambiguous to constitute a binding obligation. Professor Bin Cheng stated that "[t]he duties and rights involved amount hardly to even *obligatio imperfecta*."[74] Professor Stephan Hobe refers to it as the "so-called" due regard principle, says "[i]t is hard to regard this as a stringent obligation of a State[,]" and instead characterizes it as a "general notion."[75] By comparison, however, the due regard

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[68] *Due Regard*, BLACK'S LAW DICTIONARY (2nd ed. 1910).

[69] Marchisio, *supra* note 12, at 176.

[70] Jonathan B. Weiner, *Disregard & Due Regard,* 29 N.Y. ENV. L. J. 437, 440 (2021).

[71] *Id.*

[72] Marchisio, *supra* note 12, at 180.

[73] John S. Goehring, *Can We Address Orbital Debris with the International Law We Already Have? An Examination of Treaty Interpretation and the Due Regard Principle*, 85 J. Air L. & Com. 309, 337 (2020).

[74] BIN CHENG, STUDIES IN INTERNATIONAL SPACE LAW (Oxford: Clarendon Press, 1997) at 403.

[75] STEPHAN HOBE, SPACE LAW (Chicago: Hart Publishing, 2019) at 89, 108.

principle is not on its face any more ambiguous, imperfect, or difficult to evaluate than the rule of *pacta sunt servanda*, which blends the binding nature of treaties with good faith.[76] *Pacta sunt servanda* is also a conduct rule that is context specific, but is instead lauded as a cornerstone essential to the functioning of international law.[77] The distinction in applicability is illusory.

D. Analogous Contexts

While there is danger in overreliance on analogies for the development of space law, carefully used analogies can be helpful.[78] The due regard principle also exists in international environmental law, maritime law, air law, and other contexts. Indeed, the Cologne Commentary on Space Law recognizes that "Article IX is clearly related to other branches of international law, such as the legal regime of the high seas and international environmental law."[79] In the absence of significant practice on the application of due regard in space, we can turn to analogous contexts where due regard is conceptually the same though may be practiced differently.

Due regard has been interpreted in a maritime context by courts and tribunals. While the same term can have different meanings in different treaties and different applications of *lex specialis*, it is reasonable to assume that the ordinary legal meaning of the term itself is broadly similar in maritime law and space law. Thus, we may turn to these decisions as subsidiary sources in accordance with paragraph 1.d. of Article 38 of the I.C.J. Statute.[80]

The clearest and most helpful explanation of the term 'due regard' comes from the *Chagos Marine Protected Area Arbitration* decision by the Permanent Court of Arbitration: "...the ordinary meaning of 'due regard' calls for the [State party] to have such regard for the rights of [another State party] as is called for by the circumstances and by the nature of those rights. The Tribunal declines to find in this formulation any universal rule of conduct."[81] The *Chagos* formulation of the due regard principle helpfully clarifies that it does not apply the same way in all contexts.

This formulation indicates that any particular action or failure to act can be evaluated in its context to determine conformity with the legal rule. Additionally, a reasonable interpretation of the principle allows us to identify specific behaviors as being carried out with or without due regard in certain contexts. Those contexts may be, for examples, based on orbital regime, type of celestial body, or category of activities in question. Thus, if states so agree, the due regard principle can require a higher level of regard to other states' scientific activities when compared to commercial or other non-exploratory purposes. With this

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[76] Kennedy, *supra* note 25, at 43.

[77] *See supra* note 55, *Pacta Sunt Servanda* section above.

[78] Lachs, *supra* note 12, at 21.

[79] Marchisio, *supra* note 13, at 170.

[80] I.C.J Acts & Docs., 18 April 1946, 59 Stat. 1031, art 38(1).

[81] The Chagos Marine Protected Area Arbitration (Mauritius v. U.K), Award, ¶ 519 (Perm. Ct. Arb. 2015).

understanding, the due regard principle lends itself especially well to intersubjective norm development, providing opportunities for states to iteratively act and interact in a variety of contexts.

E. State Practice in Space

Though the due regard principle has largely been ignored by states, "it is out of the question to envisage an amendment or termination of the treaty by lapse."[82] It is appropriate to consider evolving state practice under the principle, enabling flexibility for the treaty to grow and develop alongside the activities it is meant to regulate.[83] It is not too late to breathe new life into the due regard principle that is, in point of fact, really the due regard rule.

According to Article 31 of the VCLT, the practice in question must establish subsequent agreement by the states parties,[84] though such agreement may be confirmed by the silence of some parties constituting acceptance of the practice.[85] If such an agreement is not established by the practice, then it can be taken into account under Article 32 of the VCLT.[86] It is important to note that one can establish state practice through the behavior of those states engaging in the regulated activity, even if not all relevant states engage in said activity.[87] The practice "of [s]tates whose interests are specially affected," however, is essential.[88] There is "probative value" in the practice of individual states,[89] though in this context VCLT Article 32 may relegate.

As state practice with respect to the due regard principle has not risen to the level of subsequent agreement, it is not at this stage of development directly relevant to the interpretation of the provision itself. That said, due regard has been referenced and identified in such documents as the *NASA Recommendations to Space-Faring Entities* and the *Artemis Accords*.[90] The *NASA Recommendations* are particularly noteworthy in the space science context, given the scientific value of studying the equipment left behind on the Moon more than fifty years ago during the Apollo missions. These demonstrations of state practice can help to put the community of states on a path toward evidence of interpretive agreement in the future, if other states are also willing to make due regard a cornerstone of their practice. Likewise, it will be essential for states to use the principle

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[82] Corten & Klein, *supra* note 60 at 828 (citing *Gabčíkovo–Nagymaros Project (Hungary v Slovakia)* I.C.J. Rep 1997 p. 7).

[83] Georg Nolte, Treaties and Subsequent Practice (Oxford: Oxford University Press, 2013) at 86.

[84] Dorr & Schmalenbach, *supra* note 55, at 596-601.

[85] ILC Report, 68th Session (2016) U.N. Doc. A/71/10.

[86] *Id.*; Dorr & Schmalenbach, *supra* note 55, at 603.

[87] *See generally, Legality of the Threat or Use of Nuclear Weapons Advisory Opinion* I.C.J. Rep. 1996 at 226.

[88] *North Sea Continental Shelf*, *supra* note 48, at 43 ¶ 74.

[89] Crawford, *supra* note 54, at 382.

[90] *NASA's Recommendations to Space-Faring Entities: How to Protect and Preserve the Historic and Scientific Value of U.S. Government Lunar Artifacts* (20 July 2011), https://www.nasa.gov/pdf/617743main_NASA-USG_LUNAR_HISTORIC_SITES_RevA-508.pdf at 6.

to differentiate behavior that does and does not conform with the principle of due regard and therefore the Outer Space Treaty.

It is regrettable that very few responses to the November 2021 direct assent anti-satellite weapon test by the Russian Federation invoked the language of regard. Interestingly, those that did so came from the defense community – particularly General Dickinson, the United States Space Command Commander and from the United Kingdom Minister of Defense.[91] The United States Department of Defense has been particularly forward leaning both in terms of norms of responsible behavior and application of the due regard principle.[92]

It does, however, appear that that the test may have generated a focus point for action on consensus-building and norm development with the objective of banning precisely the type of test Russia carried out.[93] On 18 April 2022 the U.S. Vice President announced that the U.S. committed they would not "conduct destructive, direct-ascent anti-satellite (ASAT) missile testing."[94] The US then worked to build consensus around this commitment and subsequently introduced a resolution at the U.N. First Committee, which spurred states to communicate their positions on the subject. By the end of the year, the U.N. General Assembly adopted the U.S. draft resolution calling on states not to conduct such tests, entitled "Destructive -direct-ascent anti-satellite missile testing" in a vote of 155 in favor to 9 against with 9 abstentions.[95] While the resolution unfortunately does not tie the ASAT test ban to the due regard principle, this series of events does provide an example of intersubjective norm creation.

F. Subsequent Agreements

Subsequent agreements can be a means of interpretation in accordance with Article 31 of the VCLT. The term 'agreements' does not have definition under Article 31, and it is notable that if the intent were to limit the scope of such agreements to treaties or conventions, the drafters could have employed one or both of those terms instead. Additionally, Article 31 specifies that subsequent practice can also be demonstrated through an 'agreement' thus indicating that the term used throughout the VCLT is not limited to legally binding conventions

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[91] James Dickenson (@US_SpaceCom), Twitter (Nov. 15, 2021) https://twitter.com/US_SpaceCom/status/1460366530122686466.

[92] Secretary Lloyd Austin, *Tenets of Responsible Behavior in Space*, U.S. Department of Defense, (2021), https://media.defense.gov/2021/Jul/23/2002809598/-1/-1/0/TENETS-OF-RESPONSIBLE-BEHAVIOR-IN-SPACE.PDF. Though there has been some criticism of the "unless otherwise directed" language in this memorandum (see Goehring, *supra* note 71), it is this author's view that the language was included to account for a situation of armed conflict in which peacetime obligations would be suspended with respect to the belligerents.

[93] Abbott, *supra* note 30, at 377.

[94] *FACT SHEET: Vice President Harris Advances National Security Norms in Space*, The White House (Apr. 18, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/04/18/fact-sheet-vice-president-harris-advances-national-security-norms-in-space/.

[95] Meeting Coverage, *Gen. Assembly Adopts over 100 Texts of First, Sixth Comm. Tackling Threats from Nuclear Weapons, Int'l Sec., Glob. Law, Transitional Justice*, U.N. General Assembly (Dec. 7, 2022), https://press.un.org/en/2022/ga12478.doc.htm.Meetings Coverage, U.N. Gen.

or treaties.[96] That said, States Parties must author subsequent agreements in whatever form.[97] Therefore, a United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) resolution adopted by consensus or another agreement authored by representatives of State Parties and adopted on behalf of those State Parties might constitute subsequent agreement for the purposes of treaty interpretation, even though the instrument is itself of a non-binding character.[98]

Though the Hague Building Blocks could be used as a basis for States Parties to author an agreement, the Building Blocks themselves could not constitute "subsequent agreement" because States Parties did not author them.[99] In contrast, however, UNCOPUOS negotiated and adopted the Remote Sensing Principles and thus could constitute subsequent agreement for the purposes of interpreting the Outer Space Treaty.[100] Interestingly, Principle IV implicates Outer Space Treaty Article IX due regard when addressing "the rights and interests…of other States and entities under their jurisdiction" in the context of the "full and permanent sovereignty of all States and peoples over their own wealth and natural resources."[101] The Long-Term Sustainability Guidelines would fall into the same category for potential applicability as a subsequent agreement, as they were likewise negotiated and adopted in UNCOPUOS. They limit their reference to due regard by reiterating that the guidelines are to be implemented in accordance with Article IX, rather than holding up sustainability as a specific subject area for further development of the principle.[102] The inclusion of the due regard language, however, is still important in reinforcing the role of due regard in the conduct of space activities.

In order to be useful in this context, norms articulated in a subsequent agreement should be of a fundamentally norm-creating character.[103] They should employ language that presents obligations (such as 'shall' or 'must') rather than creating open-textured pledges.[104] The Remote Sensing Principles are a good example of obligatory language in an otherwise soft law document.[105] In the absence of such language, even agreements expressly recognizing a link to Article IX of the Outer Space Treaty will be of an aspirational nature and will fail to add teeth to the existing due regard requirement.

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96 Hartmut Hillgenberg, *A Fresh Look at Soft Law*, 10 EUR. J. INT'L. L. 499 (1999).

97 Dorr & Schmalenbach, *supra* note 55, at 594.

98 Boyle & Chinkin, *supra* note 4, at 212.

99 HAGUE INT'L SPACE RES. GOVERNANCE WORKING GRP., *Bldg. Blocks for the Dev. of an Int'l Framework on Space Res. Activities*, INT'L INST. OF AIR AND SPACE LAW (2019), https://www.universiteitleiden.nl/binaries/content/assets/rechtsgeleerdheid/instituut-voor-publiekrecht/lucht--en-ruimterecht/space-resources/bb-thissrwg--cover.pdf [hereinafter Building Blocks].

100 *Principles Relating to Remote Sensing of the Earth from Outer Space*, UN Doc A/RES/41/65 (1986) at Principle IV [hereinafter Principles Relating to Remote Sensing].

101 *Id.*

102 Rep. of Comm. on the Peaceful Uses of Out Space, U.N. Doc. A/74/20, at I.16 (2019).

103 Cheng, *supra* note 74.

104 Raustiala, *supra* note 49.

105 G.A. Res. 41/65, *supra* note 100.

While tying norms of responsible behavior to the due regard obligation in the Outer Space Treaty is not as strong a mechanism as creating a new binding treaty with specific responsible behavior rules, it is stronger than stand-alone soft law mechanisms. "[O]nce soft law begins to interact with binding instruments its non-binding character may be lost or altered."[106] As such, agreed upon due regard duties can serve as a helpful intermediary measure between binding law and traditional concepts of soft law.[107]

G. A Note on VCLT Article 32

It is unnecessary to resort to the additional tools provided within the text of VCLT Article 32, even though they are considered customary and potentially available for use. Article 32 is specifically articulated as *supplementary* means of interpretation, used only in the case that a provision remains ambiguous or obscure, or where an Article 31 interpretation leads to a manifestly absurd result. In such cases, it would be appropriate to seek the preparatory work of the treaty and circumstances of its conclusion as interpretative tools.

While the term 'due regard' itself may be imprecise, Article 31 provides a clear guide for how it can be applied in varied contexts. The results of that Article 31 analysis do not yield ambiguous or manifestly absurd results, and thus it is unnecessary to rely on the drafting history of the treaty. As former I.C.J. Judge Manfred Lachs articulated of the co-operation and due regard provisions in Article IX of the Outer Space Treaty

> These principles may have been couched in very general and broad terms and supplemented with only a few specific rules, some of which themselves lack precision. Be this as it may, the provisions in question can hardly be regarded as nominal or devoid of substantive meaning. Nor could the rights arising out of them be viewed as imperfect, for they have become *vincula juris*, thus it can hardly be suggested that they were not intended to become effective. It may have been premature to enter into any more detailed specification of them or of the corresponding obligations. But the need for this will grow in confrontation with practice, while adequate interpretation will be called for in concrete situations. It is, however possible even now to estimate the broad consequences of these principles and rules.[108]

Thus, a lack of precision does not either remove their effectiveness nor render them so obscure that they cannot be interpreted and applied effectively with the tools offered in the primary rules of treaty interpretation.

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[106] Boyle & Chinkin, *supra* note 4, at 213.

[107] Daly, Rees, & Curtis, *Enhancing the Status of UN Treaty Rights in Domestic Settings*, University of Liverpool School of Law and Social Justice (2018), https://www.liverpool.ac.uk/media/livacuk/law/2-research/ilhru/EHRC,Enhancing,the,Status,of,UN,Treaty,Rights.pdf.

[108] Lachs, *supra* note 12, at 108.

IV. Examples

While there are a significant number of potential applications for the due regard principle in modern space activities, this paper endeavors to provide examples of current issues in international space law that the due regard principle could help to resolve.

A. Space Science

'Exploration' and 'use' are used in conjunction throughout the Outer Space Treaty, including in its full title "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies."[109] While commercial activities are implied rights within the term use, it is not clear how scientific activities that fall within the realm of exploration are treated vis-à-vis such commercial activities.[110] Should both activities be treated with equal respect? Should participants in both types of activities be subject to the same level of restrictions? While there may be valid reasons to protect exploratory scientific activities to a greater extent than other uses of space, it is not clear on its face that the Outer Space Treaty offers such heightened protection.

Freedom of scientific investigation is a specifically and independently granted right in Article I of the Outer Space Treaty, and an emphasis is placed on international cooperation particularly with regard to scientific endeavors in the preamble. Neither of those facts, however, would be sufficient to indicate an inherent predisposition to treat scientific activities in space with a higher standard of care than other activities. While Judge Lachs suggested the scientific investigation provision "indicates an intention to extend to it a special legal protection" he also recognized that doing so would "require further elaboration in detail" beyond anything offered in the Outer Space Treaty.[111] This provision calls to the attention of states the particular importance of scientific investigation within the context of exploration.[112] Thus, it is a good candidate for elaboration within the context of the due regard principle.

B. Planetary Protection and COSPAR

The Committee on Space Research (COSPAR) is comprised of national scientific institutions and international scientific unions, and therefore agreements emerging from COSPAR themselves cannot be considered subsequent agreements for the purposes of treaty interpretation.[113] However, to the extent that they contribute to the development of such subsequent agreements or result in state

[109] Outer Space Treaty, *supra* note 1, at 205.

[110] Stephan Hobe, *Article I of the Outer Space Treaty*, *in* COLOGNE COMMENTARY ON SPACE LAW VOL. I: OUTER SPACE TREATY 176 (Hobe, Schmidt-Tedd, Schrogl eds., 2010).

[111] Lachs, *supra* note 12, at 44.

[112] Hobe, *supra* note 110, at 36.

[113] *Supra*, see *Subsequent Agreements* section above.

practice utilized to interpret the terms of a treaty, they can still be highly valuable. They can, and have, also contributed to the intersubjective development of contamination norms for celestial bodies.

COSPAR "advises, as required, the UN and other intergovernmental organizations on space research matters or on the assessment of scientific issues in which space can play a role[.]"[114] The objectives of the organization are to "promote on an international level scientific research in space, with emphasis on the exchange of results, information and opinions, and to provide a forum, open to all scientists, for the discussion of problems that may affect scientific space research."[115] Therefore, COSPAR plays an important role in our evolving understanding of the role of space science.

In particular, COSPAR is well-known for its Policy on Planetary Protection, specifically for the categorization of forward contamination risk and procedures that should be taken to mitigate such risk depending on the relevant categorization.[116] The Policy expressly ties itself to the contamination language in Article IX of the Outer Space Treaty and articulates the purpose of the Policy "as an international standard on procedures to avoid organic-constituent and biological contamination in space exploration, and to provide accepted guidelines in this area to guide compliance with the wording of the UN Outer Space Treaty and other relevant international agreements."[117] On its face, it creates a clear relationship between the guidelines it proposes and the legal obligations agreed to by States Parties to the Outer Space Treaty.

While the Planetary Protection Policy has largely been well-respected, at least to a level of practicability in the course of state activities in space, it is not directly applicable to private actors unless states take steps to implement the Policy domestically. It is not itself a binding legal document, and thus does not incur an obligation for states to enforce it (on public or private actors) unless state practice is considered to rise to the level of an interpretation of the contamination provisions under Article IX or if an argument can be made that the rules articulated within the Policy have crystallized into customary international law (for the purposes of this paper, it is not necessary to reach either conclusion).

With the promulgation of private activities involving celestial bodies, space science is in jeopardy unless specific guidelines can be implemented by States Parties to the Outer Space Treaty to protect such endeavors from harmful forward contamination. Those guidelines need not be identical to those offered in COSPAR's policy. It is worth noting that there does not appear to be agreement that private actors should be held to the same standard as space agencies, as private parties themselves are not necessarily engaged in space science, and thus do not necessarily risk harm to their own activities by contamination. That said,

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114 *About*, COSPAR (June 29, 2023), https://cosparhq.cnes.fr/about/./.

115 *Id.*

116 *COSPAR Policy on Planetary Protection*, COSPAR (Aug. 29, 2022), https://cosparhq.cnes.fr/cospar-policy-on-planetary-protection/./.

117 *Id.*

in the United States, the FAA incorporates the planetary protection rules when conducting payload review.[118]

One infamous instance of potential contamination was hidden from the regulators in question (the US and Israel) by the private foundation carrying out the space activity. In that instance, dormant tardigrades crashed into the lunar surface along with the Beresheet lander.[119] Given the relatively low risk related to contamination on the lunar surface, if used the Policy would have only required the execution of a relevant mission planning documentation. However, they did not carry out that step, given the avoidance of regulatory oversight. Though the incident is unlikely to have any significant effect on space science, it highlights uncertainties that exist around protection of future scientific endeavors.

These uncertainties could be resolved with the help of the due regard principle. A consensus adopted UNCOPUOS resolution that expressly created nexus with both the due regard principle and the contamination provisions of Article IX would have significantly more legal influence than a document without such nexus, particularly if UNCOPUOS members agree that that the norms stated in the document represent an interpretation and implementation of Article IX. Though negotiations are likely to be difficult, the conversations about both planetary protection and the relationship between space science and other space activities are essential to address before it is too late and valuable discoveries are lost.

Even in the absence of such a negotiated document, states should invoke the obligations articulated in Article IX when discussing the planetary protection measures implemented on both public and private space activities. These invocations help to demonstrate state practice moving forward as a potential treaty interpretation tool, in accordance with the articulated treaty interpretation rules in Article 31 of the VCLT.[120] One significant contaminating event can render a plethora of space science activities moot and damage humanity's potential understanding of the history of the universe.

C. China's Article V Submission

Crewed space missions, particularly crewed space science missions, are arguably the activities in need of the strongest protections. The emphasis on the well-being of astronauts and personnel of a spacecraft is apparent in both Article V of the Outer Space Treaty and in the Return and Rescue Agreement.[121] That said, the additional duties expressly imposed when human lives in space are implicated are quite limited: inform of phenomena dangerous to life or health

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[118] Johnson, Porras, Hearsey, & O'Sullivan, *The Curious Case of the Transgressing Tardigrades (Part 1)*, THE SPACE REVIEW, (Aug. 26, 2019), https://www.thespacereview.com/article/3783/1

[119] Loren Grush, *Why stowaway creatures on the Moon confound international space law*, THE VERGE (Aug. 16, 2019), https://www.theverge.com/2019/8/16/20804219/moontardigrades-lunar-lander-spaceil-arch-missionfoundation-outer-space-treaty-law.

[120] *Supra*, see *Treaty Interpretation* section above.

[121] Agreement on the rescue of astronauts and the return of objects launched into outer space, *opened for signature* Apr. 22, 1968, 672 U.N.T.S. 119 [hereinafter Rescue and Return Agreement].

of astronauts, inform of the discovery of astronauts in distress, provision rescue efforts in circumstances of distress/emergency, and safely and promptly return of astronauts/personnel upon their rescue.[122] The latter three obligations are only triggered when specific personnel are already in circumstances of distress, so do not govern behavior leading to those circumstances.

In perceiving a threat from the proximity of Starlink satellites, China opted to rely on the Article V call to inform the Secretary General of discoveries of phenomena dangerous to the life or health of astronauts. Though an initial reading might prompt one to assume that the language contemplates natural phenomena, China interpreted the language to include human-made phenomena. In December of 2021, they filed a note verbale explaining the potential danger Starlink posed to their personnel aboard the China Space Station.[123] In so doing, China failed to invoke Article IX, either for the due regard principle or to request international consultations. Of course, there are likely political reasons for that choice that have little to do with the interpretation of Article IX.

D. Application of Due Regard to the Protection of Space Science

Clearer guidelines for due regard are needed when involving human lives in space. Particularly, there is also a need to determine whether there are different categories of human activity warranting different protections. The ongoing debate regarding space tourists hints at obligations to tourists if they are not "personnel of a space object."[124] Regardless of the permutations, it seems clear that more regard is required to reach 'due' regard when operating in proximity to human lives in the hostile environment of space. Without further interpretive efforts, such standards do not exist, and States are left to their own devices to figure out how to communicate about the dangers to their personnel and how to protect them.

Further guidance is necessary for implementing the due regard principle for space science. While scientific activities in space enjoy a protected status as exploration and use, and any activities that contribute to development of scientific knowledge about the universe are beneficial for humankind,[125] there is no clarity regarding the status of space science vis-à-vis other space activities. Is a higher standard of regard appropriate to protect current scientific endeavors (framed in terms of the reciprocal obligation of due regard owed to other States Parties engaged in space activities)? What about future potential scientific missions (framed in terms of the *erga omnes* obligation to preserve high value celestial bodies or regions for scientific investigation)? Do crewed space endeavors warrant more regard than uncrewed ones? Within the scope of crewed activities, does space science call for more regard than space tourism? These questions can

[122] Outer Space Treaty, *supra* note 1, Art. V; Rescue and Return Agreement, *supra* note 121.

[123] Information furnished in conformity with the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, U.N. A/AC.105/1262 (Dec. 3, 2021).

[124] *See, e.g.*, LYALL FRANICS & PAUL LARSEN, SPACE LAW: A TREATISE, 129 (2009).

[125] Hobe, *supra* note 75, at 74-75.

all be engaged through the lens of the due regard principle. The principle can be used to add legal significance to guidelines that may emerge as the proliferation of public and private space activities continues.

E. Safety Zones

At what point does the universal right to use and explore space result in circumstances of congestion under which further development of space activities becomes onerous? With the proliferation of space activities, does the safety of space objects get called into such significant question as to risk the viability of investment in commercial space companies? At what point is the security of government-owned space objects at significant risk of miscommunication and misperception that could lead to dangerous and destabilizing escalation? Of course, the objective should be to avoid having to ask these questions at all, and instead to rely on the development of norms of responsible behavior in space to mitigate these risks.

Normalizing safety zones and creating parameters for their implementation is one obvious and oft discussed method to reduce risk to the safety and security of space objects. The topic of such zones has been under discussion at least nominally since the 1960s and in a more significant manner since at least the late 1980s.[126] These zones have previously gone by several names, such as keep-out zones, operational zones, safety zones, identification zones. Safety zones is currently the most often used term. While there may be a more suitable name – coordination zones, perhaps? – 'safety zones' have become a recognized term in the literature, and thus will be used here. The 'safety zone' formulation is in line with the Outer Space Treaty, mitigating concerns regarding appropriation, aggression, and inequitable treatment. 'Keep out zones' in particular would present problematic optics, calling into question freedom of access in space (on a non-discriminatory basis) in Article I as well as potentially running afoul of a non-appropriation smell-test based in Article II. It is also worth noting that the connotation of 'keep out zones' as a speech act could have detrimental results preventing the intersubjective development of a norm relating to their use. 'Safety zones,' however, invokes a response that sounds in due regard.

To the extent that the due regard principle is an underlying fundamental limitation on the right to freedom of use held by all states, safety zones are a logical and reasonable conclusion. It is much easier to act with due regard for another state's space activity if that state articulates clearly, either individually or as part of a normative agreement, what a safe distance from that object might be. Therefore, safety zones expressly formulated as expectations for due regard are a potential solution to help avoid those pesky 'at what point' questions that we hope to avoid.

While states have various interests that would call for the creation of a safety zone, these interests must be balanced with the interests of other states and their

[126] Kenneth F. Schwetje, *Protecting Space Assets: A Legal Analysis of "Keep-Out Zones"*, 15 J. Space L. 131 (1987).

right to free access and use of space.[127] The Outer Space Treaty creates other limitations on free use of space, which "demonstrate that the freedom of exploration and use of outer space for which the [Outer Space Treaty] provides is not absolute, but must be balanced against the legitimate interests of other States[.]"[128] By some interpretations, there is a 200 kilometer 'keep out' zone around the International Space Station (ISS), though its articulation is essentially contractual in nature.[129] It is possible that the lack of controversy around the ISS safety zone is due to its contractual nature or the heightened importance of humanitarian considerations for crewed objects, or a combination of these and other factors.

There have been several justifications given for the application of safety zones, particularly "on the basis of space law concepts of harmful interference and due regard."[130] Safety zones have also been tied to the quasi-territorial jurisdiction offered to space objects under Article VIII of the Outer Space Treaty.[131] A formulation under Article VIII, however, does not preclude a complementary application of Article IX. Of course, a state holds an interest in the safety and security of any object for which they hold quasi-territorial jurisdiction.[132] Therefore, the preservation of a space object is the state's interest under Article IX.

The purpose of this paper is not to address other specific justifications for safety zones, such as those for ongoing military operations in a conflict, but rather to address how the due regard principle can be used broadly in the application of safety zones. It is interesting to consider, however, whether there could be a possible relationship between the customary international law right to self-defense and the creation of a zone requiring operators of a spacecraft to identify themselves prior to a close approach to a specific space object or constellation. Acting with due regard in the case of a high-value military asset, such as a missile warning satellite, might require a heightened level of communication to avoid misperception of hostile intent or imminent armed attack and potentially dangerous escalation. Of course, for such a justification of a safety zone to be reasonable, a state would have to be willing to disclose that the object in question is just such a high value military asset.

F. In Orbit

Safety zones for objects in orbit or otherwise keeping station in the void of outer space, for example in a LaGrange point, will operationally be treated

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127 Matthew Stubbs, *The Legality of Keep-Out, Operational, and Safety Zones in Outer Space*, *in* WAR AND PEACE IN OUTER SPACE: LAW, POLICY, AND ETHICS 203 (Cassandra Steer & Matthew Hersch, eds., Oxford Univ. Press 2021).

128 *Id.* at 206.

129 Melissa de Zwart, *To the Moon and Beyond: The Artemis Accords and the Evolution of Space Law*, *in* COMMERCIAL AND MILITARY USES OF OUTER SPACE 75 (Melissa de Zwart & Stacey Henderson, eds., Springer 2021); Stubbs, *supra* note 127.

130 de Zwart, *supra* note 129.

131 Outer Space Treaty, *supra* note 1; Stubbs, *supra* note 127, at 205.

132 *See generally* Outer Space Treaty, *supra* note 1, Art. VIII.

distinctly from safety zones that would apply to celestial bodies.[133] The physical considerations of relevance for orbital activities are fundamentally different. Objects in orbit are traveling at incredibly high rates of speed, and the possibility of collision risks the creation of debris that could cause a cascade and damage other objects and/or make operations in that orbital plane more difficult.

Even among different orbital regimes, different norms with respect to safety zones will need to apply. Take for example, the Geostationary Orbit ("GEO"). GEO is a congested limited resource, where operators employ fleet management including frequent movement of space objects.[134] To reduce the risk of collision or harmful interference, "the satellite telecommunications operators have established a shared and common database of technicalities associated with each satellite they operate, which can facilitate safe movements and close locations[,]" a practice which could be developed into a GEO norm, to reduce the size of any needed safety zones and ensure safe operation.[135]

The flexibility of the due regard principle means that norms could be articulated to apply a differing due regard standard dependent on context. Context could include factors such as orbit, purpose or function (are some activities accorded more regard than others?), and whether the object is crewed or uncrewed. It is likely that the question of some activities requiring more protection than others through larger safety zones or heighted requirements for communication and coordination in those safety zones could be particularly contentious.

While it is unlikely that offering heightened protection to crewed objects would be contentious, at least in the short term, the idea of offering certain military satellites heightened protection would likely illicit a contentious response. On the one hand, while the GPS constellation is a Department of Defense asset, on the other it provides essential navigation signals that can be a critical factor in survival of patients being transported on Earth, as well as timing signals that maintain the functioning of our international banking system.[136] The example of missile warning satellites in the section above would be another potentially contentious consideration. A granular set of norms may not be desirable from the perspective of states who wish maintain relative secrecy around the specific functions or purposes of some of their assets.

It would be helpful for these questions to be articulated and the discussion started by an international group of experts, who can make recommendations to policymakers as to how to address these questions on the basis of their particular interests. Only then can progress toward consensus begin. It is heartening that such topics are within the scope of the OEWG established last year.[137]

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133 *What is a Lagrange Point? NASA: Solar System Exploration* (Mar. 17, 2018), https://solarsystem.nasa.gov/resources/754/what-is-a-lagrange-point/.

134 Constitution of the International Telecommunication Union, art. 44.2, Dec. 22, 1992, 1825 UNTS 390, 1996 UKTS 24.

135 Jean Francois Bureau, *Space Security and Sustainable Space Operations: A Commercial Satellite Operator Perspective*, *in* HANDBOOK OF SPACE SECURITY: POLICIES, APPLICATIONS AND PROGRAMS VOL II at 1067, (Kai-Uwe Schrogl ed., 2nd ed. 2020).

136 10 U.S.C. § 2281(a); Andrea J. Harrington, *Regulation of Navigational Satellites in the United States, in* ROUTLEDGE HANDBOOK OF SPACE LAW (Ram S. Jakhu & Paul S. Dempsey, eds., 2016).

137 *See supra Context: Why Does Due Regard Matter?* section above.

G. On Celestial Bodies

Celestial bodies pose different potential considerations. Of course, the crewed versus uncrewed issue remains the same, as does the potential heightened value for science missions that would contribute to human understanding of the universe. That said, however, the high velocities of orbit and potential for debris cascade do not exist on celestial bodies. Instead, the risks are more likely risks of contamination, other interference with scientific endeavors, or damage caused by regolith displaced in other operations. Accusations of appropriation, however, are likely to play out differently in the application of safety zones on celestial bodies, given the likelihood that installations will be established in locations that provide good access to physical resources that can be used for fuel or 3-D printing, access to solar power resources, and access to good visibility for communication relays.

Possession and/or ownership of physical resources severed from celestial bodies complicate the question of safety zones, though the extraction and use of those resources is largely accepted as compliant with the Outer Space Treaty.[138] Both the Artemis Accords and the Hague Building Blocks have endeavored to normalize the use of safety zones and establish the permissibility of safety zones in accordance with the Outer Space Treaty. In the case of the Accords, such zones are intended to protect operations generally, as well as specifically with respect to the space resource sites contemplated in the same document.[139] The Hague Building Blocks expressly address resource utilization as their fundamental purpose.[140]

The preservation of humanity's heritage in outer space has already been raised as a concern.[141] Notably, the non-governmental organization *For All Moonkind* has elevated this issue both in the media and in UNCOPUOS discussions. How should safety zones be established around heritage sites that are, by their very nature, no longer in use? The *NASA Recommendations* provide one clear example of technical parameters to protect the scientific value of heritage sites, in that instance, the Apollo lunar landing sites.[142] If safety zones for heritage sites are normatively established, however, it will be necessary to establish parameters for determining additional heritage sites in the future. Such parameters will need to balance the equity of "space firsts" with the interests of developing countries only later venturing into space.

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138 *See*, e.g., Stephan Hobe et al, Does International Space Law Either Permit Or Prohibit The Taking Of Resources In Outer Space And On Celestial Bodies, And How Is This Relevant For National Actors? What Is The Context, And What Are The Contours And Limits Of This Permission Or Prohibition? (2016), https://iislweb.org/docs/IISL_Space_Mining_Study.pdf.

139 Artemis Accords, *supra* note 44.

140 Building Blocks, *supra* note 99.

141 *See* Andrea J. Harrington, *Preserving Humanity's Heritage in Space: Fifty Years After Apollo 11 and Beyond*, 84 J. AIR L. & COM. 299 (2019).

142 NASA Recommendations, *supra* note 90, at 6; *see also* Michelle Hanlon, *"Due Regard" for Commercial Space Must Start with Historic Preservation*, 9 Global Bus. L. Rev. 130, 151-152 (2021).

H. Application of Due Regard to Safety Zones

The goal of Article IX has been stated as "to build trust and informal coordination of space activities as a way to avoid ambiguity and miscommunication in the space domain that could lead to conflict."[143] Publicly stated safety zones would offer a means to avoid exactly such ambiguity and miscommunication. Ideally, those safety zones would be formulated on a broad consensus basis to apply to a range of space activities under varying circumstances. In the absence of such agreements, however, states can still provide data on how much area around their objects is necessary to ensure safety and security. That data should be communicated expressly in connection with Article IX as a formulation of how to act with due regard for the particular space activity in question. This behavior would not only increase safety and security of space operations but would also have the benefit of strengthening the due regard principle in a broader range of contexts and offering states opportunities for iterated interactions to build trust and confidence.

V. Due Regard as the Prime Directive

Though 'due regard' is a broad term, one cannot consider it to lack substantive meaning or binding force. Rather, it requires the implementation of a balancing test rooted in a reasonableness standard, reliant on the good faith of States Parties. None of these are unfamiliar concepts in either international or domestic legal systems. Those who would argue that due regard is too vague a requirement to be implemented on its own should consider that *pacta sunt servanda* is not considered to be too indeterminate.

Writing in 1972, Judge Lachs posed that the interests of states recognized in the due regard principle of Article IX "are to be construed on a basis of a reasonable interpretation of those rights. They constitute the limits of the freedom of action of States in outer space."[144] He further expounded that, while states have a right to freedom of access to all areas of celestial bodies that provides a right to establish installations, these rights shall only be exercised in a manner compatible with due regard.[145] This early analysis offered by one of the parents of international space law aligns with the idea that due regard is the thread that holds the tapestry of international space law together, the prime directive of international space law.

While some have discussed at conferences and workshops that due regard should be considered the "golden rule" of space law, that moniker introduces more challenges to the application of the principle. The golden rule is widely understood to be some formulation of "do to others as you would have them do to you."[146] First, this standard is an entirely subjective one. In a world of different

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[143] TANJA MASSON-ZWAAN & MAHULENA HOFMANN, INTRODUCTION TO SPACE LAW 68, (4th ed. 2019).

[144] Lachs, *supra* note 12, at 43.

[145] *Id.* at 45.

[146] *Golden Rule*, ENCYCLOPEDIA BRITANNICA, https://www.britannica.com/topic/Golden-Rule (last visited Oct. 17, 2023).https://www.britannica.com/topic/Golden-Rule.

states with different cultures, forms of government, legal systems, and interests, such mirror imaging is not only unhelpful but downright dangerous, increasing the risk of misperception and escalation. Second, the rule is the basis of an ethical framework, rather than a legal regime.[147] The conflation of law and ethics is a pervasive problem that weakens the strength of existing legal regimes.

Though "prime directive" evokes *Star Trek*, it is a more reasonable title for the status of the due regard principle, even in that context. There is also precedent for applying the cultural context of *Star Trek* in discussions of actual space activities. Take, for example, the *Star Trek* exhibit offered by the Smithsonian National Air and Space Museum or the naming of the Space Shuttle prototype "Enterprise" in homage to the series that inspired so many people who subsequently dedicated their lives to space.[148] Also known as General Order One, the *Star Trek* prime directive can be characterized as a legal requirement with an objective interpretive lens.[149] While the obligation not to interfere with the development of pre-warp civilizations is certainly not itself relevant to modern international space law, the broader underlying rule "prohibits interference with the normal development of any society."[150] Thus, it can be understood that both the due regard principle and *Star Trek*'s General Order One are predicated on concepts of autonomy and sovereignty, maximizing freedom of action within reasonable limitations to avoid curtailing the freedom of action of others. Both also face challenges to their application (in their respective contexts) from those actors with a mindset akin to New Realism.[151]

The due regard principle calls for respecting the activities and interests of others, without needing to look deeper at the intent of those activities or the underlying reasons for the interests, reducing the risk of misperception or mirror imaging. It also inherently acknowledges the importance of individual state interests, a key sticking point for devotees of realist international relations theory. "There can be no doubt that the freedom of action of States in outer space or on celestial bodies is neither unlimited, absolute or unqualified, but is determined by the right and interest of other States."[152] This formulation aligns with Star Trek's "Prime Directive [that] reflects both a consequentialist commitment to reducing harm and a Kantian commitment to respecting the autonomy of others."[153] While evoking ethical philosophers, the directive presents objective rather than subjective standards, specifically harm reduction and maximized autonomy. Finally, a

147 *Id.*

148 Richard J. Peltz, *On a Wagon Train to Afghanistan: Limitations on Star Trek's Prime Directive*, 25 UALR L. Rev. 635, 636-37 (2003).

149 Andrew Steele, Interfering in a Non-Interference Policy: Defining Star Trek's Prime Directive (Aug. 2016) (Master's Thesis, Loyola University Chicago) (eCommons).

150 *Id.* at 14 (citing OKUDA ET AL., STAR TREK ENCYCLOPEDIA: A REFERENCE GUIDE TO THE FUTURE: UPDATED AND EXPANDED EDITION at 385 (1999)).

151 For comparisons specifically relating to Star Trek's General Order One, see Peltz *supra* note 148, at 649-650.

152 Lachs, *supra* note 12, at 108.

153 Janet D. Stemwedel, The Philosophy Of Star Trek: Is The Prime Directive Ethical? (Aug. 20, 2015, 10:53 AM), https://www.forbes.com/sites/janetstemwedel/2015/08/20/the-philosophy-of-star-trek-is-the-prime-directive-ethical/?sh=62c3fbbb2177.

"catchy" name with relevance in popular culture can help to both raise the profile of the due regard principle and internalize the norm through repeated interactions, causing it to become a more well-known part of the constructed reality of international space law.

VI. Conclusion

In a system of due regard, unjustified disregard is what failure looks like. The community of states can determine whether behavior is responsible by its impact on the freedom of action of other individual states *and* the international community of states *erga omnes*.[154] In so doing, this formulation of responsible behavior manages both negative externalities (consequences on specific activities and actors) and potential inequity in uses of space overall.[155] It allows for taking into consideration the intergenerational and intertemporal interests that states (and all of humanity) have in the exploration and use of space.

Though it may satisfy positivist international law scholars who wish to see binding legal rules expressly agreed by states, beginning with intentional norm development is a rational choice in the reality of the international system as we know it today. This view of due regard assumes that states comply with international law both because of a sense of legal obligation and because that compliance is in their rational self-interest.[156] Due regard provides an adaptive legal system that can develop in accordance with changing technology, proliferation of human-made space objects, and entry to the space domain of a wider range of actors. As a binding treaty rule, due regard enables the use of existing *lex lata* to get to *lex ferenda*, law as it should be.

Due regard itself is an intermediary measure – weaker than specific binding obligations, but stronger than stand-alone soft law. It can be used to harden specific norms (add teeth to the interpretation of Article IX of the Outer Space Treaty) through subsequent agreements between States Parties. That said, states must be willing to commit to use of the tool and articulate that use in both contexts: responding to individual instances of irresponsible behavior demonstrating unjustified disregard and formulating new norms of behavior for different activities and contexts.

Meaningful behavior, or action, is possible only within an intersubjective social context. Actors develop their relations with, and understandings of, other through the media of norms and practices. In the absence of norms, exercises of power, or actions, would be devoid of meaning.[157]

It cannot be overemphasized that the onus rests with policy makers, diplomats, and other state officials to actively participate in the development of international space law in the social context of the international system, broadly conceived. Without such interactions, norm development will fall short and the likelihood

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154 *See* Barcelona Traction, *supra* note 9 (for *erga omnes* obligations), at ¶ 33.

155 Masson-Zwaan & Hofmann, *supra* note 143, at 68.

156 *See* Ohlin, *supra* note 37, at 147-153 for a discussion of the relationship between legal obligation and rational self-interest.

157 *See* Hopf, *supra* note 32, at 173.

of impending crisis or disaster in space as a result of miscommunication, misperception, or accident will increase. Active, intentional application of the due regard principle as the prime directive of international space law would allow such actors to skip ahead on the path to norm development and build on the firm foundation of the Outer Space Treaty.