

# Space Security in a Development Deadlock

The role of the United Nations First Committee in preserving  
peace in outer space



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# Abstract

This research will study whether the discourse of the UN First Committee in discussing outer space security has changed over the past four years of available data, being 2014 till and including 2017, and to which extent the rhetoric reflects a sense of urgency fueled by the rapid increase in actors in outer space outside of the space powers, which the global community has previously known of, including the presence of the private sector. Throughout this study, it is found that the discussions by Member States of the First Committee on outer space security has developed over the four years between 2014-2017 in a number of ways. Through a constructivist perspective, the study examines the general expression of the level of urgency in the matter of space security being built through the rhetoric of the statements by the Member States and finds that there is very little change from year to year in the discourse on outer space. This development deadlock of international regulations on the use of outer space is a threat to international security and should be approached. Technological advancement is moving fast in the field of outer space and the cost of launching satellites are sharply declining, a combination which leaves multilateral organizations ensuring international security like the United Nations to facilitate international dialogue that can develop results and change.

*Key words:* outer space, United Nations, satellites, treaties, diplomacy, security

Words: 9952

# Abbreviations

<b>ABM</b>	Anti-Ballistic Missile Treaty
<b>CDA</b>	Critical Discourse Analysis
<b>DISC</b>	Disarmament and International Security Committee
<b>ESA</b>	European Space Agency
<b>GA</b>	General Assembly
<b>LEO</b>	Low Earth Orbit
<b>MEO</b>	Medium Earth Orbit
<b>GEO</b>	Geosynchronous Satellite
<b>NASA</b>	National Aeronautics and Space Administration
<b>PAROS</b>	Prevention of an Arms Race in Outer Space
<b>RCI</b>	Rational Choice Institutionalism
<b>UN</b>	United Nations
<b>UNCOPUOS</b>	United Nations Committee of the Peaceful Uses of Outer Space
<b>UNIDIR</b>	United Nations Institute for Disarmament Research
<b>UNSC</b>	United Nations Security Council
<b>U.S.S.R</b>	Union of Soviet Socialist Republics

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# 1. Introduction

The notion of the ‘peaceful uses of space’ introduced by former United States President Eisenhower in 1958 has steered outer space activities for more than 50 years (Eisenhower 1958). Between the U.S. and the U.S.S.R., firstly, this principle was understood as consisting of military, commercial, and research purposes and activities with the purpose being to exclude the placement of weapons in outer space. This understanding stands today at a critical point as norms around activities in outer space have changed and more players today are active in this field. Though there is global consensus to avoid weaponization of space, which countries reiterate yearly in their support for the UN resolution “Prevention of an Arms Race in Outer Space”, PAROS, international regulations and agreements on the use of outer space have still to this date not been set in stone and the risk of outer space being the next battlefield is very much alive (UNIDIR 2002). “Space security is fragile and, in the long term, an open question,” Gérard Brachet, Chairman of the United Nations Committee on the Peaceful Uses of Outer Space, UNCOPUOS, argued at the UNIDIR Conference on Security in Space in 2008 (UNIDIR 2008). Parallel to Member States not being able to come to a consensus on how to prevent weaponization of outer space, activities in outer space and the actors involved and invested in the field have skyrocketed over the past decades. Private-sector actors and smaller developing countries have been enabled to participate in outer space activities through reduced costs and rising competition connected to launching satellites. The increasing number of commercial satellites reaching Earth’s orbit, which – contrary to national space programs – do not recognize national boundaries, has placed additional pressure on multilateral organizations like the UN to produce international regulations and rules to guide this development and prevent conflict in outer space.

## 1.1 Purpose and aim

The purpose of this research is to investigate the nexus between international security and the development of technology. With a special focus on the United Nations General Assembly First Committee the Disarmament and International Security Committee, DISEC, as a representative of one of the highest levels of international security supervision, this study will be armed to examine the particular case of development in space security over four years and its manifestation in the DISEC. The four years from 2014 to 2017 lay the foundation for the timeframe studied to be able to analyze the presence of the topic of space security in the DISEC. The timeframe has been chosen with the

idea in mind of analyzing the most recent data available to be able to ensure the relevance of the conclusions of this study. Previous research has been examining the overall developments of outer space treaties at the United Nations, yet this study will contribute to the understanding of the role of the United Nations First Committee and how the Committee reflects the rapid developments, we see in the field of outer space activities. This is reached by a Critical Discourse Analysis enabling the study to dive into the details of the statements by Member States during the First Committee meetings to paint a picture of their idea of the level of urgency to develop international regulations. Through the lens of Rational Choice Institutionalism, RCI, the study addresses the analysis with the ontological viewpoint of States being individual players in a game where the end goal should be a conclusion which benefits all members. It is believed that this thesis can add to the overall understanding of the present and future threats from developments in technology and shed light on the presence of these topics in the DISEC. The study is intended to be illustrative, not exhaustive, of the initiatives of the United Nations to approach outer space security and will, hopefully, be able to contribute in a small but significant manner to the general understanding of how international security bodies like the UN General Assembly First Committee relate to technological developments that could pose threats to global peace and security.

## 1.2 Research questions and outline

Taking into account the complexity of the issue of outer space security, the main research question focuses on the discussions of the UN First Committee and the level to which these reflect the development in the world and its' current presence in outer space and has been phrased as following:

*How has the discourse of the UN First Committee around space security developed throughout the past four years and does it reflect the urgency of international guidelines for activities in outer space?*

In particular, the increasing amount of parties involved in exploring and using outer space is focused upon in this study to investigate the reflection of the current circumstances in outer space in the discussions of the First Committee. This will be emphasized through the minor research question:

*Is the involvement of private sector entities as well as developing nations in the launching of satellites to outer space incorporated as part of the discussion on space security in the First Committee, thereby acknowledging the rapid technological developments in this field?*

This minor research question emphasizes the significance in investigating the security threats posed by space objects like satellites to international peace and the avoidance of conflict creation and conflict escalation. The above research questions stresses the interlinked themes of the study including geopolitics, international security, and new types of technology that makes space security an issue. These interlinkages in the particular case of the DISC will be examined.

The structure of the thesis will be to, firstly, use previous literature to define the concepts most essential to the study compromised to international security, the role of the DISEC, as well as space security in all its aspects. Secondly, the methodology and theoretical framework to support the purpose and aim of the study will be presented. A qualitative case study method will enable the research to work on an in-depth level with the matter of the integration of space security in issues of global peace and the theoretical framework will guide the thesis in its investigation of the nexus between international security and technological development (Punch 2013 p.144-146). Finally, the analysis will examine and later present the presence of space security in DISEC meetings from the four years, 2014-2017, to illustrate the emphasis places on the threats of technological developments enabling nations to wage war in outer space.

### 1.3 Delimitations and limitations

The study is aware that a case study of the presence of space security in the United Nations General Assembly First Committee will not be able to lay the full foundation for general conclusions on space security in international security or the DISEC's implementation of new technology as possible threats to global peace and security but simply allow a window of opportunity for insight into the nexus of international security and technological development. The research is intended to be illustrative, not exhaustive, of the initiatives of the United Nations to approach space security through the First Committee.

The focus on the DISEC poses limitations to the thesis as it does not fully cover the attention paid to threats to space security on national, regional, and not to a full extension on the international level. The First Committee, as mentioned before, is chosen as a case study to stand as an example of multilateral and international focus placed on space security issues for the thesis to be able to contribute to a greater understanding of the nexus between technological development and

international security. Again, as this thesis merely offers a window into the area of this nexus, there will be parts of the dialogue around space security that this study will not cover.

The time span of the study, outlined in section 1.1, which covers four years of DISEC meetings also poses as a limitation to the study. The time span gives an insight but not a full coverage of the implementation of human activity in outer space as threats to international security in the United Nations General Assembly First Committee. The four year time frame will allow the most current and contemporary understanding of the nexus between technological developments like satellites and the maintenance of international peace and security.

## 2. Literature review

Previous literature has focused mainly on the different outer space treaties of the United Nations but none have yet to discuss the discourse within the First Committee, its relationship to space security or the extent to which threats to space security are perceived in an arena of policy making and decision-taking essential to international peace and security. These issues have so far not been fully addressed in outer space literature and especially with the contemporary timeframe of analyzing the past three years of activity in the DISEC.

Previous literature like Marshall (2015) has argued that geographical factors have be essential to determine conflict escalations and the means of waging war between nations and states. Marshall (2015) argues, that geography is one of the greatest and most disregarded factors in international relations and global security. He emphasizes a variety of important areas of international peace and security that have played major roles in international organizations like the United Nations and their peacekeeping missions. Yet, technological development is changing the way we wage war and the current global community is faced with the reality of future battles being fought in a place where borders no longer exist, rivers do not flow, and mountains cannot keep enemies apart: space (Marshall 2015 p.2-5).

Brooks (2012) argues that “the world we live in has changed substantially since 1945, both in terms of widely shared normative assumptions and in terms of technology and risk. But if the charter system is being tacitly jettisoned, the least we can do it acknowledge it, and begin the difficult project of developing new rules and institutions to preserve peace in this new era. If we don’t, we risk a return



to the Hobbesian international order the Charter was design to eliminate” (Brooks 2012 p.35). Thereby stressing the importance of keeping up with technological developments in international security like threats posed to space security.

Kent (2015) supports this notion and adds the role of international organizations as decision-makers and policy planners in his study questioning if the international community is prepared for the challenges brought by future warfare. By examining transformative factors of international relations, changes in conflict development and escalation as well as the possibilities of warfare within a 2040 timeframe, Kent (2015) argues that through the adoption of anticipatory and adaptive approaches to impending threats to international security, the international organizations will improvement their level of preparedness. Furthermore, he argues that the level of complexity of the issue we will face in the future, will require an equal level of complexity in approach to solving it. Therefore, international organizations must be open to inviting a variety of specializations into the discussions on the future threats to international security.

The process of developing rules and regulations necessary to keep space safe was initiated early in the space age and looked, as argued by Jasentuliyana (2001), rather promising. “Contrary to other areas of international law, such as the law of the sea of aviation law, where international law-making and cooperation were slow to follow the new dimensions of human activity, the very first steps in the exploration of outer space were almost immediately followed by the development of new norms of international law and cooperation. Thus, no sooner had the space age begun, than the international community embarked on its task of formulating international rules and regulations for the conduct of human activities in outer space, so as to bring the uses of this new technology within the bounds of international law.” (Jasentuliyana 2001). Recent years, though, have shown a decline in the development of international agreements on the peaceful use of outer space and the law-making processes have slowed down. Parallel to this development, space technology has taken off and launched an incredible increase in private entities investing in outer space. The combination of slower pace in policy making and an increase in the activities in outer space of both private and governmental matter is one of great concern (Jasentuliyana 2001).

Bittencourt Neto (2015) examines the diplomatic delegations’ statements to United Nations Committee on the Peaceful Uses of Outer Space, UNCOPUOS, in terms of support for delimitation which shows a significant majority. This study, though, emphasizes the quantitative aspect of support for legislative measures to be undertaken and not the qualitative characteristics of the discourse

among members of the Committee. Furthermore, it focuses on the particular committee of UNCOPUOS and not DISEC which is inclusive of all matters to international peace and security. This aspect adds to this thesis, an opportunity to understand the focus placed on particularly outer space and space security in a forum where international security in all its aspects shall be discussed and considered. (Bittencourt Neto 2015 p.93-95).

An in-depth analysis of the rhetoric and discourse within the First Committee meetings have not been conducted yet and is especially relevant at this moment in time, when the world sees a rapid increase in space actors as well as fast paced growing technology enabling cost-efficient satellites launches amongst other things. This emphasizes the need for international bodies like the UN to move faster in their development of international guidelines and legislative frameworks.

### 3. Theoretical Framework

#### 3.1 Rational Choice Institutionalism

Institutionalism is a theory in international relations which believes that states are self-interested, rational actors seeking to survive while increasing their material conditions, and that uncertainty pervades relations between countries. The theory argues that collaboration between states is possible based on the notions of microeconomic theory and game theory. Rational Choice Institutionalism, RCI, perceives institutions as equilibriums of strategic interactions between groups of rational decision makers. The rationality assumption, which underlies the approach, demands at least the decision makers be goal oriented and have transitive preferences over the possible outcomes of the interaction they are jointly involved in. (Schneider and Ershova, 2018). It is considered that the actors take decisions following a rational choice, but they have limited knowledge and limited cognitive capacity (Ingram and Clay 2006 p.526-527).

Through the ontological position of institutionalism and in particular RCI, this analysis will be equipped to focus on the institution of the United Nations as examined to understand, to a large extent, the context of the textual material studied. The analysis of the data with a lens of RCI will give the thesis a foundation to discuss the role of the UN First Committee in a world where technological developments are lifting warfare above the grounds. As the thesis aims to identify the

level of significance placed on space security in the context of international security by the First Committee, it is important to lay the foundation from which the motivations of the First Committee members can be understood. Rational Choice Institutionalism will support this throughout the study.

## 4. Method and Empirical Material

In this part of the thesis, constructivism will be presented as the ontological position of the study. Subsequently, the qualitative method of Critical Discourse Analysis, CDA will be introduced as a key element in analyzing the statements at the First Committee meetings on outer space. This method enables the study to break down the textual material and understand underlying political agendas or tensions amongst Member States that influences the debate. Constructivism and CDA in collaboration form a critical framework through their shared belief that principles like “international security” cannot be universalized or be presented in a multilateral environment without being politically biased to some extent.

### 4.1 Methodology

The thesis is a single qualitative case study on the nexus between technological development and international security with the particular focus on the United Nations General Assembly First Committee and the threats posed to space security. In the focus of a single case study, limitations arise, as mentioned in segment 1.3. Yet, this study does not aim to be the foundation of a generalization on the complex theme of technological development in international security, but a simple contribution to the enhancement of the understanding of this area. As argued by Bryman (2012), the theoretical framework is the basis from where the relevance of the findings of the analysis arise and grounds its contribution to the understanding of the DISEC and technological developments as threats to global peace and security (Bryman 2012 p.69-70).

### 4.2 Material

The study draws on primary material from the United Nations General Assembly First Committee through official meeting coverages available online. In accordance to the timeframe outlined in segment 1.1, the material will be collected on all DISEC meetings over the past four years, where data is available from the United Nations, from October 2016 to, and including, October 2018.

Therefore the sessions covered will be from the 69th session to the 73rd session. In this timeframe, 9 meetings have found place on outer space security in the First Committee and will therefore be analyzed. The First Committee is the only Main Committee of the General Assembly which is entitled to verbatim records coverage, which means that the official records analysed in this study can be used as true representation of what has been said during these DISEC meetings (United Nations, n.d.)

#### 4.3 Constructivism

Constructivism is adopted throughout the analysis of the study to support the social aspects of change in the discourse on the theme of space security. Through this ontological lens, the thesis will be able to compare the development in the focus on space security in the First Committee and provide foundation for understanding if such development changes the discourse on outer space security within international organizations, like the UN (Jørgensen and Philips 2002 p.4-6). The thesis therefore chooses to view the development in topics of importance (to the matter of space security) and the way they are discussed during meetings at the First Committee as part of a social process. It is believed that the terms used and the emphasize placed on space security will reflect how the members of the First Committee relate to the seriousness of space threats. As Foucault (1980) argues, perception is shaped by language, knowledge and definition as part of a social process.

#### 4.4 Critical Discourse Analysis

Critical Discourse Analysis, CDA, provides the framework to approach the research questions of the study. CDA places great significance on the role of language as a power resource that is related to ideology and socio-cultural change. In particular, Fairclough's CDA model will be adopted. The model is built on the notion that context shall be part of understanding textual material completely and stresses that text cannot be examined in isolation (Jørgensen and Philips 2002 p.61-63).

The model emphasizes three dimensions to the use of language as a communicative event: textual production, discursive practice, and social practice. The textual production is simply the text as part of the communicative event. The discursive practice refers to the process behind the production and consumption of the texts. Finally, the broader context in which the discourse is deployed and dispersed is included through analyzing social practice (Bryman 2012, p.528-530).

All three areas of CDA will be included in the analysis through the following analysis segments. Firstly, through the 9 meeting coverages of the First Committee, in which space security is discussed, the textual production terms used in regards to space threats and space security will be analyzed. This also emphasizes the idea by Foucault (1980) of language being part of perception, which in turn is considered a social process. Additionally, the discursive practice will be discussed in terms of how language and choice of words within the statements in the meetings can push political agendas. Investigating different terms and sentences in the statements gives an insight into the political actions promoted and similarly suppressed during the meetings of the GA First Committee. Lastly, there will be drawn parallels between the discourse used in the discussions and the level of significance placed on space security as expressed by the First Committee and the development of such significance over the past years. In general, the analytical framework will provide the tools to examine the representation of space security as a threat to international security from the point of the First Committee.

CDA and constructivism goes hand in hand in this research as they both look to emphasize the social concepts behind the debates examined in the thesis. As constructivism, contrary to neorealism and neoliberalism, believes that international relations are widely impacted by socially constructed aspects. Finnemore (1996) argues that States' interests are constructed through social interaction and molded over time, not something that develops out of nowhere (Finnemore 1996, p.2). In this context, this study is looking to shed light on the interests of Member States in the First Committee on developing international regulations on outer space activities and questions if they are stuck in a development deadlock.

## 5. International Security Threats and Technological Development in Outer Space

This chapter will introduce the ways in which space can be used for waging war and present the issues related to space security as well as the obstacles for the development of international relations. Furthermore, it will explore the United Nations' role in creating outer space treaties and norms to guide the activities in outer space.

### 5.1 The question of geography

Marshall (2015) argues, that geography is one of the most overlooked aspects of international security. He argues that countries like India and China with no alignments politically or religiously that are geographically rubbing shoulders have not waged war on one another because of the placement of the fourth longest mountain range in Asia and the world's tallest peak, Mount Everest, in between them. The resources, manpower and time necessary to tend to such a war would be detrimental to both sides. This notion emphasizes the important role geography play in international relations, especially when it comes to global peace and security. Following the theory of Marshall (2015), geopolitics has played an essential role in many years when it comes to who wages war against who but also in terms of how they are waging war. Both human made borders but also those of natural kinds: rivers, mountains, and difficult climate have all been challenges posing as obstacles of waging war between nations. Yet, technological development has brought many of our day-to-day realities to space, orbiting the planet on a daily basis. This poses as a threat of the militarization of space that has no borders of human creation or of natural origin.

### 5.2 International territory and sovereignty

There are three components defining the modern state: a collective of individuals/a people, a specific geographical area under a particular national rule of law, and sovereignty. Sovereignty here defined as the “superior authority over people located in a certain territory that allows the development of independent international relations”. The geographical borders between nations determine the sovereignty and is the foundation of the peaceful coexistence of states. (Bittencourt Neto 2015 p.4-6). Those rules are applicable on the surface of the Earth, but with technological development, warfare has been taken literally to altitudes above the foundation of these rules.

Internationally, a collective consensus to the agreement that a nation's sovereignty applies extensively to a zone above the surface of the significant geographical area of the nation makes it possible for states to e.g. observe and regulate foreign aircrafts in the airspace. Yet, no such definition can be reached when it comes to outer space. In this study, outer space is defined as “space immediately outside the earth's atmosphere” (Merriam-Webster n.d.). The United Nations has been part of determining the ground rules for peaceful use of outer space, as will be discussed, and withholding that outer space is open to any nation and any person. As Gál (1969) explains it: “*outer space is,*

*morally speaking, the common property of all mankind, because the Space Treaty regards the space exploration and use of the cosmic space as 'the joint venture of all mankind' declaring, as it does, the right of all States, without discrimination and based on sovereign equality, to carry on space activities. This is the meaning of the term 'res communis omnium' and nothing else."* (Gál 1969 p.123-125).

There are two important difference between space and other places in which war can be waged. Firstly, there is no way to claim a part of space as one can with a piece of land on Earth and all activities in space are taking place in a continuous state of motion. Secondly, moving in space and being in orbit means the object covers not just part of the Earth but a large amount of it. In comparison to travelling by on land or at sea, activities in space are limited to that of technology to control the orbits of the objects in use. Thus, the understanding of warfare the global community has from experiences on land, at sea and in air cannot be directly applied when discussing waging war in space and especially the inclusion of the notion of national sovereignty. (Kleinberg 2007). Before technology made it possible to launch satellites into space, there had been little worry dedicated to the development of definitions of the use of outer space. US President Eisenhower in his 1957 State of the Union speech addressed the issue and proposed a five-element disarmament approach which was then handed in to the United Nations. International attention and admiration spiked the same year in 1957, when the Soviet Union launched the first rocket to place a satellite in Earth's orbit, Sputnik. Still with no legislative frameworks, eleven satellites had already been launched in 1959 either by the US or the Soviet Union. (Jessup and Taubenfeld 1959).

### 5.3 The current use of outer space

Space has over the past decades become an increasingly large element in areas of military, communication systems, navigation, etc. and has found place as part of a nation's power and pride. Satellites are used by governmental bodies as well as private companies to support this range of functionalities of outer space. In terms of military, as Center for Strategic and International Studies puts it: "Space capabilities enable the American way of warfare by making it possible for U.S. military commanders and forces to see the battlespace more clearly, communicate with certainty, navigate with accuracy, and strike with precision," (Harrison et al. 2018).

As the figure below shows, there are currently a large amount of commercial satellites in orbit compared to governmental and military satellites which is a new development. The inclusion of the private sector in outer space is a matter which will be explored further in the study. It is also noticeable that the United States have a much larger amount of satellites deployed than any other spacefaring country, yet the number of “other” countries that have deployed satellites are rising, which will also be further discussed in the thesis.

<b>Satellite Quick Facts</b> <i>(includes launches through 3/31/19)</i>			
Total number of operating satellites: 2,062			
United States: 901	Russia: 153	China: 299	Other: 709
LEO: 1,338	MEO: 125	Elliptical: 45	GEO: 554
Total number of US satellites: 901			
Civil: 38	Commercial: 523	Government: 164	Military: 176

Figure 1 - Satellite Facts, Union of Concerned Scientists (2019)

#### 5.4 United Nations General Assembly First Committee and space treaties

The United Nations General Assembly First Committee is the committee of the six main committees at the General Assembly of the United Nations that focuses on “*with disarmament, global challenges and threats to peace that affect the international community and seeks out solutions to the challenges in the international security regime*” (United Nations n.d.). “*The principles governing disarmament and the regulations of armaments*” should be the foundation for the development of recommendations by the General Assembly as defined in article 11 of the UN Charter. The First Committee will send a resolution to the General Assembly to verify the formal adoption of the resolution.

1967 signified a landmark in the developments of frameworks to guide the peaceful use of outer space with the implementation 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, or simply put, the Outer Space Treaty. This provided the international community with the basic foundation for



international space law (United Nations Office for Outer Space Affairs n.d.). In 1972, the Convention on International Liability for Damage Cause by Space Objects, or Space Liability Convention, entered into force. With its roots planted in Article 7 of the Outer Space Treaty, it lays the foundation for the responsibility of each state in terms of the possible damage space objects can make on Earth, in air space, or in outer space (United Nations Office for Outer Space Affairs n.d.).

The Convention on Registration of Objects Launched into Outer Space, the Registration Convention, was adopted two years later in 1974 and entered into force in 1976. States had previously issued clear interest in an instrument which could assist in identifying objects launched into space. Through this convention, “when a space object is launched into earth orbit or beyond, the launching State shall register the space object by means of an entry in an appropriate registry which it shall maintain.” (United Nations Office for Outer Space Affairs 2017:24-26). Lastly, the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, also known as the Moon Agreement, was adopted in 1979 but not put into force before 1984 after the final ratification by Austria (United Nations Office for Outer Space Affairs n.d.).

Thereby over the span of just 10 years, the United Nations managed to develop five multilateral treaties as well as adopt five sets of legal frameworks through the General Assembly. The legal principles have established that no part of outer space can be of sovereign national possession. They have prevented the placement of weapons of mass destruction, WMD, like nuclear weapons, in outer space and have, furthermore, established regulations for national accountability in outer space in terms of e.g. damage on other nations’ space objects. The treaties are all focused on the notion that outer space is open to exploration and functions as a devotion to the improvement of developments that beneficial to humankind as well as international collaboration like the sharing of data, exchange of information etc. (Jasentuliyana 2001; Kyriakopoulos and Manoli 2019 p.1-4). Though treaties have been created and negotiations are on the table, outer space security is still part of the overall “disarmament deadlock” that has been evident in the United Nations for the past couple years. In 2011, then Secretary-General Ban Ki-moon called the multilateral disarmament machinery of the UN a failure and emphasized the need for change. The question now is, whether outer space security has become as still-standing as many other areas of disarmament and international security at the United Nations (UN News 2011). It is difficult to talk about a disarmament deadlock when it comes to outer space as outer space has not officially been weaponized yet. Therefore this study finds it more appropriate to talk of a development deadlock on outer space negotiations.

### 5.5 Possibilities of warfare in space

There are a number of different ways in which outer space objects can be used directly as weapons or indirectly for the purpose of harming another nation's property. In an interview by Al Jazeera's The Stream, Victoria Samson from the Secure World Foundation alongside Kazuto Suzuki from the Space Policy Journal and Daniel Porras, a space security fellow at the United Nations Institute for Disarmament Research in Geneva, UNIDIR, express their professional opinions on the likelihood of future warfare being fought in space (Suzuki et al. 2019). They agree that the probability of war in space is high and explain what this will actually look like.

Firstly, space based weapons are possible tools for waging war in space. These are basically satellites attacking another satellite that could be of great importance to a particular country. Suzuki emphasizes that here is no need to destroy the satellite to cause major disruption but a simple disablement of the satellite could be enough (Suzuki et al. 2019). The second option is ground to space. This was demonstrated, amongst other examples, in 2007 by China through an anti-satellite missile test, which was the first known successful satellite intercept test since 1985. These tests are used to demonstrate a country's capabilities of shooting down a satellite with missile defense systems on the ground (Gordan and Cloud, 2007). One of the major current obstacles to developing international regulations for the use of outer space is the responsibilities for space debris, which, amongst other examples, is a consequence of such anti-satellite missile tests.

Finally, space based missile defense systems can be used to shoot down a missile from space. This is an opportunity to use outer space to wage war which is not effective nor feasible yet. The large amount of satellites required to detect an incoming missile makes this possibility of waging war from space ineffective and unfeasible so far. The development of such capabilities of shooting down missiles from space are also of grave concern to the international community, explains Parros in the interview with Al Jazeera, as it suggests the possibility of using the same weapons to attack instead of defend incoming attacks. (Suzuki et a. 2019). A seemingly more peaceful use of satellites to intervene in the affairs of other countries is that of radio frequency interference. Through this method, satellites can be used to distort or jam signals from a satellite to Earth, which in a case of military communication satellites could prove to be extremely damaging to a nation (Wood, 2019).

### 5.6 Privately owned companies in space

For many years outer space activities have been solely operated by governmental bodies of space-faring nations without much inclusion of the private entities (Kleinberg 2007). This is changing with private-sector companies becoming increasingly involved in outer space activities. Post-Cold War, the world has also seen a shift in the focus placed on the utilization of outer space with an enormous increase in private entities investing which has only fueled the speed of use of outer space and therefore the need for detailed regulations and rules of such use (Kyriakopoulos and Manoli 2019:2-6). A current example of private companies becoming increasingly active in outer space is that of Space X owned by Elon Musk. The company has laid the foundation for satellite launching becoming increasingly affordable whilst working on its newest project: providing quality internet access globally through a net of satellites in close orbit to Earth (The Economist, 2019). In May 2019, the private rocketry firm launched 60 satellites into space to initiate this project (Hall 2019: SpaceX 2019). Though the intentions are to support international development and increase global equality, initiatives like these are of serious concern to the global community.

As mentioned previously, space debris is an issue widely discussed in DISEC on the matters of security in outer space. The risks of debris from commercial satellites disabling satellites essential to e.g. a nation's communication systems are a cumulative reality. Debris is referred to both when talking about the rocket body bringing the satellite to orbit as well as the satellite itself, when it is no longer in use. There are two types of debris in space: natural and artificial. In this study, focus is placed on the man-made debris, often referred to as orbital debris, as it orbits the Earth not the Sun as natural debris like meteoroids does (National Aeronautics and Space Administration 2013). Throughout this research, the use of the word debris therefore refers to orbital debris. According to the European Space Agency, there are currently more than 8400 tons of space objects in Earth orbit, whereas 34,000 of them are bigger than 10 cm (European Space Agency 2019). China's 2007 anti-satellite missile test, as an example, added more than 3,000 pieces of debris to the problem. As the pieces travel at high speeds in Earth's orbit, they thereby pose grave dangers to active satellites as just a small piece can cause damage when moving at such velocities. (National Aeronautics and Space Administration 2013).

A change in the actors in outer space from mainly governmental bodies to a mix of private and governmental entities and of such dramatic increases in activities by these newly added actors will have to be met with an increased sense of urgency in international bodies like the United Nations to

develop global regulations on outer space activities, argues Kyriakopoulos. As he concludes: “*The existing antinomies between the international outer space legal framework (still) in force and the (private) activities that are underway require a substantial legal update of the existing international norms (e.g. through improvement, renovation and/or change), especially given their inadequacy in terms of legal security, as soft law principles and guidelines do not suffice to bring the necessary stability and certainty.*” (Kyriakopoulos and Manoli 2019:12-14). There is currently little regulation on satellite launches by privately owned companies for commercial purposes but as the problem of space debris is a shared concern amongst governments and private companies invested in space alike, private entities have the incentive to support the development of international regulations initiated by governments and international organizations (Frankowski 2017).

## 6. Analysis and Discussion

Through this discourse analysis, the study seeks to investigate the connection between words, phrases, and general discourse that characterizes the First Committee meetings on outer space security. Through analyzing components and textual production of statements in details, several aspects of the development of the dialogue surrounding space security like sense of urgency in the advancement of international regulations as well as the notion of sovereignty amongst the States in terms of use of outer space are all discussed as part of the analysis. The rhetoric and verbalization of the texts will firstly be analyzed followed by a discussion of the discursive practice in the First Committee meetings on outer space security. Lastly, the social practice and in particular the coherence between the realities of increased developments in space actors as well as activities and the characteristics of the dialogue within the First Committee and sense of urgency expressed in this forum will be analysed, as the research seeks to answer the minor research question of whether the rhetoric around outer space security in the First Committee reflects the urgency expressed in the increasing space actors and activities.

### 6.1 Rhetoric of the Member States

Throughout the four years of meetings on outer space within the First Committee analyzed in this study, the repetition of specific words and phrases creates a pattern of coherence between the States

Parties and their stands on outer space security. Words like ‘weaponization’, ‘arms race’, and ‘militarization’ are used by certain States Parties when discussing outer space. Statements as the following emphasize the countries’ positions on security in outer space with usage of this particular words:

*“Indonesia remains concerned over the threat of the weaponization and militarization of outer space.” (Indonesia, First Committee 2014, meeting 21, p.19)*

*“It is in the common interests of all countries to ensure the peaceful uses of outer space and to prevent the weaponization of, and an arms race in, outer space. China has always been against the weaponization of, or an arms race in, outer space and is actively dedicated to maintaining peace and security in outer space.” (People’s Republic of China, First Committee 2014, meeting 21 p.20)*

*“We must not forget that, at one, time, there were clear agreements between the Soviet Union and the United States of America on the unacceptability of the placement of weapons in outer space. One obstacle is the militarization or weaponization of outer space, as I hope all know, was the Anti-Ballistic Missile Treaty of 1972.” (Russian Federation, First Committee 2015, meeting 15 p.19)*

The choice of words and phrases used in statements create clear alignments amongst the States Parties that are maintained from 2014-2017. As shown above countries like Indonesia, China, and Russia are, throughout the four years of meeting coverages included in this study, dedicated to using similar rhetoric in statements during First Committee meetings on outer space. In contrast, the United States does not include the same words as shown in the above examples and countries such as France, Australia, etc., who are usually aligned with the statements of the US, uses very few of these trigger words throughout the four years included in this study. In the textual production of the meeting coverages on First Committee outer space meetings, it is therefore clear that certain State Parties are aligned in their statements and there is little change in their choice of words or phrasing throughout the four years investigated in this study and that through their choice of words, the countries are able to establish their political standpoints and emphasize alliances.

A sense of urgency throughout the First Committee meetings on outer space security seems to increase exponentially over the years, emphasizing the enhancement of space activities globally and growing number of actors active and invested in outer space activities. The sense of urgency is expressed through a change in the rhetoric used in the language of the official statements by the nations participating in the First Committee meetings.

*“My delegation would like to explain its vote on draft resolution A/C.1/69/L.14, entitled “No first placement of weapons in outer space”. Mexico will support this draft resolution, as we agree with the importance and urgency of preventing an arms race in outer space, in keeping with our commitment to preserve outer space for solely peaceful uses and in accordance with our quest for general and complete disarmament under strict international control.” (Mexico, First Committee 2014, meeting 21 p.21)*

The above statement quote is an example of one of the few statements during the 2014 First Committee meetings that show a sense of urgency using words like important, urgency, solely, and strictly. In 2014, there are not many of such statements though. In 2015, the United States is still emphasizing the great benefits of outer space and focusing very little on the development of international regulations in comparison to other nations participating in the DISEC meetings.

*“Today we find more than 60 nations and numerous Government consortiums, scientists and commercial firms accessing and operating satellites for countless economic, scientific, education and social purposes. This situation has elevated international space systems and activities to a global scale, that is, they are of benefit not only to their immediate users, owners and operators, but also to the global economy and security environment.” (United States, First Committee 2015, meeting 13, p.10)*

Yet, an increasing number of countries are starting to incorporate stronger language and change in rhetoric during the meetings with France stating that *“the space environment is steadily deteriorating”* (France, First Committee 2016, meeting 15, p.9). Countries that have previously been milder in their language during the statements on outer space seem to be hardening their language.

*“The importance of outer space activities has never been greater than it is today,”* (Japan, First Committee 2016, meeting 15 p.20).

This example is Japan’s very first sentence in their statement on outer space at the 15<sup>th</sup> meeting in 2016, which provides a clear sense of urgency. In general, throughout the years examined in this study, as the statement quotes imply, Member States are starting to communicate such a sense of urgency and are calling more intensively for progress to be made and steps to be taking towards internationally recognized rules and regulations. Warfare in outer space is something we have not yet been led to have to deal with as a global community and through the lens of constructivism in international relations, the idea of the threat of such phenomena and the reality of it is under

construction on a continuous basis. From the perspective of Rational Choice Institutionalism, this means that the Member States will be influenced, when discussing and voting on behalf of their nations, by the existing language and rhetoric used about outer space, emphasizing the importance of understanding the rhetoric and change in such of the meetings over the years.

The content of the statements in the First Committee during their meetings on outer space security changes throughout the four years examined in this study. The changes represent a shift in focus and, furthermore, emphasizes a continued enhanced sense of urgency and an embrace of the scope of the issues posed by increased outer space activities.

As Brooks (2012) argues, continuous technological advancement requires the creation of international security agreements in all aspects and areas (Brooks, 2012). As technology to e.g. launch satellites into space is becoming cheaper and more accessible, the numbers of active private entities as well as nations in space are rising. This notion seems to be taken more and more seriously at the First Committee over the studied years and focus is increasingly placed on different developments in outer space that needs to be taken into account when discussing the future of legal frameworks in outer space, one of them being the advancement in actors represented in space. It is not until 2015 and 2017, though, that the idea of an increasing number of nations becoming spacefaring finds its way into the First Committee discussions:

*“The changes in the situation in outer space from the one we knew 50 years ago are clear, as has been noted. Space is now used by and for many more people. It is no longer reserved for the military or for scientists, nor can it be summed up as a race of technology or exploration. [...] Space is no longer the place of rivalry between two great Powers, but it has remained a strategic frontier and is still vulnerable to competition among Powers.” (France, First Committee 2017, meeting 11, p.16-17)*

As implied by the quote from the French statement, more focus than previously is placed on developing countries and smaller state actors becoming increasingly invested and active in space. This broadens the scope of the issues included in the debate on outer space than previously and enhances the sense of urgency towards developing international regulations as more actors are involved.

*“With the growing number of Member States with interests in outer space, we have also seen a growing number of private-sector actors. We believe that those actors should be fully engaged in the*

*development of space policy, including on the very critical issue of how to address space debris.”*  
(Australia, First Committee 2017, meeting 11 p.21)

As Kent (2015) argues, complexity in the way we approach these increasingly complex issues is needed and the issues of outer space, space debris, the question of sovereignty etc. surely becomes more complicated with the involvement of private companies as well. The level of complexity the global community will be dealing with in the future in terms of types of warfare will require a complex approach in return (Kent 2015). The above example shows that the First Committee States Parties are becoming aware of the increase in activities in outer space and actors involved in such activities. It demonstrates the embrace of the complexity of the issues around space security.

These statement examples show the development in the content of the dialogue on outer space security in the UN First Committee. Throughout the years studied, it is clear that there is an enhanced sense of urgency expressed in general during the DISEC discussions on the use of outer space and a change in focus onto new developments and involvements in outer space shows how the First Committee are taking these changes into account and at least discussing them.

## 6.2 Advancements in space security discourse and diplomatic dialogue

The statements and each particular component of these statements are in the arena of the UN First Committee all subject to different constraints of political and social characteristics. As mentioned above, though sovereignty and equality are both emphasized in the UN Charter, power relations amongst the Member States are still widely discussed and raised as issues standing in the way of developing international legislative regulations on space security. In this part of the study, the discursive practice of the statements, the constraints as well as biases shaping how they are perceived understood in the political landscape represented in the First Committee, will be discussed.

Parížek (2016) argues, that dysfunctional communication amongst states in negotiations on multilateral levels is the main difficulty they face. It can be argued that there are many different issues posing as obstacles for the development of international regulations being developed on space security, when examining the statements on outer space security in the First Committee. It is clear, that issues like sovereignty and dominance of specific countries are of grave concern to many Member States. These are issues, the United Nations as a multilateral institutions has had to deal with since its origin and still might be struggling with today.



In the very introduction of the Charter, the acceptance of equality and sovereignty of any state by the United Nations is stressed and reiterated throughout the Charter (Tatar, 2018). Especially the notion of sovereignty is an issue raised numerous times in the First Committee's debates on space security from 2014-2017 and is essential to the understanding of the urgency of developing international regulations on the use of outer space.

*“Argentina recognizes the importance of the theme of sustainability and long-term space activities, whose study should not, under any circumstances, be turned into an instrument so that the countries that have traditionally managed space technology establish restrictions on other countries regarding their legitimate rights, aspiration to the right and the use of space technology as a fundamental tool to improve the living conditions of their peoples,” (Argentina, First Committee 2015, meeting 13, p.20)*

Several statements like the above mention the threat posed by more powerful nations to smaller states in their quest to develop outer space activities of their own. Even in space, it seems there is still a great divide between the good old Global North and Global South. Without international legislative regulations on the use and exploration of outer space, the smaller States in the First Committee discussions emphasize their concern of being excluded and become vulnerable to the States which are capable of launching satellites etc.

As argued previously, sovereignty has been a key factor in describing the relationships between nations of the UN since the development of the United Nations Charter and stands as a perennial subject in this multilateral environment (Harvard Law Review, 1961). Through the example above it is clear that issues of sovereignty are still very present in the disarmament discussions of the First Committee. The dominance of particular countries in contrast to others is an underlying issue in outer space. Through the lens of Rational Choice Institutionalism, Member States are driven by their national interests and are seeking to survive in this multilateral environment. This is clearly represented in the discussions where countries are fighting for their sovereign rights to explore and use outer space to the same degree as any other country. This suggests that the tensions related to the divide between the Global South and the Global North global are underlying problems within the UN and tensions of international relations matter that are reflected in the statements in the First Committee meetings that influence the development of security in outer space.

### 6.3 Reflection of the international political landscape in space

Multilateral negotiations form an essential part of international politics. Yet, in many key issue areas of international cooperation, the progress of negotiations has for years been lagging behind the expectations. The decline in outer space security negotiations and development of international regulations in this field is obvious (Jasentuliyana 2001). Throughout the years examined in this study, it becomes evident that diplomacy and international politics play a major role in the discussion on outer space security. International tensions pose as a deeply embedded obstacle of development within the United Nations in general and should therefore be included in the overall picture of the process of creating international regulations and legislative foundation in the case of space security. The reflection of the international political landscape onto the discussions of outer space security paints a picture of a First Committee with Member States who are not utilizing the time given to them during these discussions to focus mainly on the relevant issues of outer space, but to emphasize political standpoints and point fingers at other Member States. An example is shown below.

*“In 2008, together with our, we submitted to the Conference on Disarmament in Geneva a draft treaty on the prevention of the placement of weapons in outer space and the use of force or the threat of the use of force against outer space objects,” (Russia, First Committee 2017, meeting 25, p.17)*

The statements by Member States are often used to these kinds of alliance reiteration or the opposite, like the United States during the 25<sup>th</sup> meeting as well:

*“To the representative of the Pyongyang regime, I say once again that his country is an outlier and an outcast. The Democratic People’s Republic of Korea should comply with its international obligations and end the provocative behavior and acts that threaten peace on the Korean peninsula and beyond. Only then will it have any opportunity to get back into the good graces of the international community,” (United States, First Committee 2017, meeting 25 p.27)*

The disarmament development in outer space thereby ends in a deadlock in comparison to where it should be by now. International politics, alliances, etc. seems to be standing in the way of a productive and relevant discussion. As Jasentuliyana (2001) argues, it is a dangerous nexus between a development deadlock in international regulations on outer space activities and the increase of activities in this area of global security.

The development of international regulations on the activities and deployment of objects in outer space seems to draw unanimous support from the Member States and though there have been changes

in the discussions on outer space in the First Committee over the years examined in this study, the sense of urgency is still not strong enough for the Committee to come to consensus or more towards much compromise.

*“In many ways, the future of the U.S. is tied to the development of space. Given the many issues facing this development and the potential for conflict, one would expect widespread and vigorous debate on the subject. Such is not the case, however.”* (Hyten 2002).

As Hyten (2002) argues, the debate is not reflecting the actual urgent need for international regulations that the world is currently facing and it seems the development is facing a deadlock. When including the view of Rational Choice Institutionalism, one could argue that there in the First Committee is the hope of coming to a collective rational decision. In the theory of rational choice institutionalism, the best choices of the actors involved in the decision making should be the collective good. Yet, it seems that in the area of outer space security, the Member States have a hard time staying rational and keeping the collective goal in sight.

Above are mentioned the changes that have been detectable throughout the four years examined in this analysis. Yet, reality is that not much has changed in the statements of the Member States, where some even recycle sentences from previous years' statements. Such a development deadlock in an area experts call “the next battlefield” is of grave danger to international peace and security (Suzuki et al. 2019). In the light of the previous discussed general disarmament deadlock at the United Nations, countries like the United States have been standing in the way of progressing with the development of international regulations in outer space. They have blocked talks on PAROS in the Conference on Disarmament, CD, since 1995, and from their withdrawal of the Anti-Ballistic Missile Treaty, ABM, in June 2003 the US Department of Defense have pushed for extended military use of space which includes war-fighting abilities (UNIDIR 2002). Yet, there is no way of pointing fingers at the United States solely as those stalling the process of international regulations on outer space activities. China as well as Russia have been addressed throughout all four years examined in this study by the United States asking them to answer questions on their initiatives towards the prevention of the placement of weapons in outer space and also on the use of force against outer space objects. For every meeting, the answers are vague and with little concrete to say about the concerns being presented by the United States. Furthermore, it is evident throughout the 9 meetings analysed in this study that smaller countries feel threatened by the dominance of the United States in outer space paired with them to some extent stalling development of international regulations to the use of outer

space. Thereby, international politics is widely represented in the statements analysed and play a vital role in the dialogue on outer space security in general but it is obvious that with the ever increasing presence of private companies and a growing number of smaller states active in outer space, international regulations and legislative rules must be put forth to prevent conflict in outer space.

## 7. Conclusion

Throughout this study, it has been found that the discussions by Member States of the First Committee on outer space security has developed over the four years between 2014-2017 in a number of ways. Critical Discourse Analysis has enabled the study to dive into the elements of the dialogue in these discussions and detect the developments throughout the years. Elements include change in content in terms of focus being turned towards developing states as well as private sector actors in outer space, a change in rhetoric from several Member States when discussing the urgency of the matter, as well as how the use of particular words in statements is being used to emphasize alliances between the Member States on the matter of outer space security and express their political standpoints. It has been stressed that a tension-filled international political landscape is reflected in the outer space discussion in the First Committee with examples of countries engaging in discussions on matters regarding international security and international affairs in general, rather than the development of international regulations to the use of outer space.

Furthermore, this study has emphasized the need for change in international security and the need for a different approach than what has previously been used to avoid conflict and conflict escalations, as outer space is a new territory outside international legally-binding laws, which stands as a huge potential threat to international peace and security. Building this research on the issue of outer space security has provided this study with the chance to question the current approach to developing international regulations on outer space and shed light on the issues remaining in the forum of the First Committee.

The technological developments are moving in fast pace, and perhaps the United Nations is not able to keep up with the pace of which technology advances in an area like outer space, at least as long as diplomacy and international relations still occupy such great parts of the discussions. Conclusively, this study suggests that though there are changes to the discourse surrounding outer space security in the United Nations General Assembly First Committee, differences in national interests as well as a

consistent lack of a sense of urgency in the field of outer space security holds the creation of international regulations in a development deadlock. Further research into the motivations behind each nation's interest in the area of outer space security would be of great value to this area of study; a development that could build on the insight provided by this thesis on the development of the discourse of the First Committee.

## 8. Bibliography

- Hall, Shannon (2019) After SpaceX Starlink Launch, a Fear of Satellites That Outnumber All Visible Stars, New York Times, June 1, 2019, <https://www.nytimes.com/2019/06/01/science/starlink-spacex-astronomers.html>, accessed on 10 August 2019
- Bittencourt Neto, Olavo de Oliviera (2015), Defining the Limits of Outer Space for Regulatory Purposes, Springer
- Brooks, Rosa (2012), Be Careful What You Wish For: Changing Technologies, and the Lower Cost of War, American Society of International Law, vol. 106
- Bryman, Alan (2012), Social Research Methods, Oxford UP, Oxford
- Eisenhower, Dwight D. (1958), Letter to Nikolai Bulganin, Chairman, Council of Ministers, U.S.S.R., January 13, Public Papers of the Presidents of the United States
- European Space Agency (2019), Space Debris by the Numbers, January 2019, [https://www.esa.int/Our\\_Activities/Space\\_Safety/Space\\_Debris/Space\\_debris\\_by\\_the\\_numbers](https://www.esa.int/Our_Activities/Space_Safety/Space_Debris/Space_debris_by_the_numbers), accessed on 11 August 2019
- Foucault, Michel (1980), Power/Knowledge: Selected Interviews and Other Writings, Pantheon Books, New York
- Frankowski, Pawel (2017), Outer Space and Private Companies Consequences Global Security, Politeja, issue 50, p.131-147
- Gál, Gyula (1969), Space Law, A. W. Sijthoff, Leiden, the Netherlands
- Gordon, Michael R. and Cloud, David S. (2007), U.S. Knew of China's Missile Test, but Kept Silent, New York Times, published 23 April 2007, [https://www.nytimes.com/2007/04/23/washington/23satellite.html?\\_r=1&adxnnl=1&oref=slogin&ref=asia&pagewanted=print&adxnnlx=1177412634-gIokCeqAhuEUTz6obSrvpQ](https://www.nytimes.com/2007/04/23/washington/23satellite.html?_r=1&adxnnl=1&oref=slogin&ref=asia&pagewanted=print&adxnnlx=1177412634-gIokCeqAhuEUTz6obSrvpQ), accessed 9 August 2019
- Harrison, Todd; Johnson, Kaitlyn, and Roberts, Thomas G. (2018), Space Threat Assessment 2018, Center For Strategic and International Studies CSIS, Aerospace Security Project

- Harvard Law Review (1961), National Sovereignty of Outer Space, Harvard Law Review Association
- Hyten, John E. (2002), A Sea of Peace or a Theater of War? Dealing with the Inevitable Conflict of Space, *Air & Space Power Journal*, vol. 16, issue 13
- Ingram, Paul, Clay, Karen (2000) The-Choice-Within-Constraints New Institutionalism and Implications for Sociology, <http://www.columbia.edu/~pi17/525.pdf> accessed 29 July 2019
- Jasentuliyana, N. (2001), International Space Law Challenges in the Twenty-First Century, *Singapore Journal of International and Comparative Law*, vol. 5
- Jessup, Phillip C. and Taubenfeld, Howard J. (1959), Outer Space, Antarctica, and the United Nations, *International Organization*, vol. 13, no. 3, University of Wisconsin Press
- Jørgensen, Marianne and Phillips, Louise J. (2002), *Discourse Analysis as Theory and Methods*, SAGE Publications
- Kent, Randolph (2015), The Future of Warfare: Are We Ready? *International Review of the Red Cross*, vol. 97
- Kleinberg, Howard (2007), On War in Space, *Astropolitics*, vol. 5, issue 1, page 1-27
- Kyriakopoulos, George D. and Manoli, Maria (2019), *The Space Treaties at Crossroads*, Springer
- Marshall, Tim (2015), *Prisoners of Geography*, Elliott and Thompson Limited, London
- Finnemore, Martha (1996), *National Interests in International Society*, Cornell University Press, Ithaca N.Y.
- Merriam-Webster (n.d.), definition of outer space, review from: <https://www.merriam-webster.com/dictionary/outer%20space>, accessed 14 August 2019
- National Aeronautics and Space Administration (2013), Space Debris and Human Spacecraft, September 2013, [https://www.nasa.gov/mission\\_pages/station/news/orbital\\_debris.html](https://www.nasa.gov/mission_pages/station/news/orbital_debris.html), accessed 11 August 2019
- Punch, Keith F (2013), *Introduction to Social Research, Third Edition*, SAGE Publishing

- Schneider, Gerald and Ershova, Anastasia (2018), Rational Choice Institutionalism and European Integration, Oxford University Press
- SpaceX (2019), Starlink Mission, <https://www.spacex.com/news/2019/05/24/starlink-mission>, accessed 10 August 2019
- Suzuki, Kazuto; Porras, Daniel and Samson, Victoria (2019), Is Space the Next Military Battleground, interviewed by Al Jazeera's The Stream, March 26 2019, <http://stream.aljazeera.com/story/201903251418-0025813> accessed on 9 August 2019
- Tatar, Volkan (2018), The Concept of 'Sovereignty' in the United Nations' Documents, Electronic Turkish Studies, Vol. 13, Issue 17
- The Economist (2019), SpaceX will launch dozens of "Starlink" satellites, <https://www.economist.com/science-and-technology/2019/05/09/spacex-will-launch-dozens-of-starlink-satellites>, accessed 10 August 2019
- UN News (2011), Amid Deadlock in UN Disarmament Forum, Ban Suggests Way Forward, 27 July 2011, <https://news.un.org/en/story/2011/07/382752-amid-deadlock-un-disarmament-forum-ban-suggests-way-forward>, accessed 14 August 2019
- UNIDIR (2002), Outer Space and Global Security, Conference Report, 26-27 November 2002, Geneva, United Nations Publications
- UNIDIR (2008), Security in Space – The Next Generation, Conference Report, 31 March – 1 April 2008, New York and Geneva, United Nations Publications
- Union of Concerned Scientists (2019), Satellite Facts, <https://www.ucsusa.org/nuclear-weapons/space-weapons/satellite-database>, accessed 14 August 2019
- United Nations (n.d.), General Assembly of the United Nations, Disarmament and International Security (First Committee), <https://www.un.org/en/ga/first/>, accessed 14 August 2019
- United Nations, General Assembly, First Committee (27 October 2014), A/C.1/69/PV.18, Sixty-ninth session, 18th meeting, New York, <https://undocs.org/A/C.1/69/PV.18>, accessed 14 August 2019



- United Nations, General Assembly, First Committee (30 October 2014), A/C.1/69/PV.21, Sixty-ninth session, 21st meeting, New York, <https://undocs.org/A/C.1/69/PV.21>, accessed 14 August 2019
- United Nations, General Assembly, First Committee (22 October 2015), A/C.1/70/PV.13, Seventieth session, 13th meeting, New York, <https://undocs.org/A/C.1/70/PV.13>, accessed 14 August 2019
- United Nations, General Assembly, First Committee (23 October 2015), A/C.1/70/PV.15, Seventieth session, 15th meeting, New York, <https://undocs.org/A/C.1/70/PV.15>, accessed 14 August 2019
- United Nations, General Assembly, First Committee (3 November 2015), A/C.1/70/PV.23, Seventieth session, 23rd meeting, New York, <https://undocs.org/A/C.1/70/PV.23>, accessed 14 August 2019
- United Nations, General Assembly, First Committee (19 October 2016), A/C.1/71/PV.15, Seventy-first session, 15th meeting, New York, <https://undocs.org/A/C.1/71/PV.15>, accessed 14 August 2019
- United Nations, General Assembly, First Committee (12 October 2017), A/C.1/72/PV.11, Seventy-second session, 11th meeting, New York, <https://undocs.org/A/C.1/72/PV.11>, accessed 14 August 2019
- United Nations, General Assembly, First Committee (17 October 2017), Seventy-second session, 16th meeting, New York, <https://undocs.org/A/C.1/72/PV.16>, accessed 14 August 2019
- United Nations, General Assembly, First Committee (30 October 2017), Seventy-second session, 25th meeting, New York, <https://undocs.org/A/C.1/72/PV.25>, accessed 14 August 2019
- United Nations Office for Outer Space Affairs (n.d.), Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, <http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/intromoon-agreement.html>, accessed 14 August 2019
- United Nations Office for Outer Space Affairs (n.d.), Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space,

<http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introrescueagreement.html>  
accessed 9 August 2019

United Nations Office for Outer Space Affairs (n.d.), Convention on International Liability for Damage Caused by Space Objects,  
<http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introliability-convention.html> accessed 9 August 2019

United Nations Office for Outer Space Affairs (n.d.), Convention on Registration of Objects Launched into Outer Space,  
<http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introregistration-convention.html> accessed 10 August 2019

United Nations Office for Outer Space Affairs (2017), International Space Law: United Nations Instruments, United Nations

United Nations Office for Outer Space Affairs (n.d.), Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies  
<http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/introouterspacetreaty.html>  
accessed 14 August 2019

Wood, Johnny (2019), The Countries With the Most Satellites in Space, World Economic Forum, 04 March 2019, <https://www.weforum.org/agenda/2019/03/chart-of-the-day-the-countries-with-the-most-satellites-in-space/> accessed 11 August 2019