A Narrative Analysis of the Corporatization of Celestial Bodies

by

Benedetta Franzini

B.A., University of British Columbia, 2019

Extended Essay Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Arts

in the
School of Communication (Dual Degree Program in Global Communication)
Faculty of Communication, Art and Technology

SIMON FRASER UNIVERSITY
Summer 2020

Approval

Name:	**Benedetta Franzini**
Degree:	**Master of Arts**
Title:	**A Narrative Analysis of the Corporatization of Celestial Bodies**
Program Director:	**Katherine Reilly**

Katherine Reilly
Senior Supervisor
Associate Professor

Katherine Reilly
Program Director
Associate Professor

Date Approved: August 31, 2020

Abstract

The main argument of this research is that SpaceX and the government of United States are creating a conception of outer space that directly challenges UNOOSA 1966 Outer Space Treaty. In making this argument, the research draws on theories of the social construction of space and offers a critical analysis of geopolitical and spatiality discourse about Space travel and exploration. By comparing historical efforts of colonization by private corporations – such as the East Indian Company – to the modern exploration by SpaceX of celestial bodies and outer space, the research sheds light on the links between exploration and colonization. In particular, it explores the relationship between the state and private firms, and more broadly, state power and capitalism, in these processes.

Keywords: outer space; exploration; UNOOSA; United States government; SpaceX

To My Family

Acknowledgements

There are many people that need to be thanked for all the help and support they gave me during this journey. First, I would like to thank my supervisor, Dr. Katherine Reilly, for taking me in and teaching me everything possible about how I could transfer my thesis topic from international relations to communication. Your passion for teaching and your organization skills kept me motivated and on task. You patiently nudged me in the correct direction when I would get stuck or when I would be uncertain about my research. You always made yourself available and ensured that I would also make time for other activities other than thesis writing. Your support was crucial to the success of this project.

I would also like to extend my thanks to Dr. Adel Iskandar Farag and Dr. Daniel Ahadi for helping me create a foundation for my research during the first stages of writing. During your class I learnt how I could communicate my ideas by highlighting my positionality and how communication can become a political tool that can either reinforce or break social constructs. I am also grateful for Dr. Anis Rahman for sharing with me his knowledge on technological advancement and outer space exploration. You helped me create a stronger case for how SpaceX is able to challenge UNOOSA 1966 Outer Space Treaty by explaining what corporations can legally do nationally and internationally. You also showed me why SpaceX is such an exceptional corporation compared to other private companies.

Lastly, I would like to thank my family without whom I would not be in Canada graduating from a master's degree. Although we were not able to physically be with each other due to the outbreak of Covid-19, their support never lacked. Their belief in me gave me energy to keep going when I was struggling the most, and their pride in my achievements made me eager to keep working and accomplish yet another goal. My friends and partner have also been my rock during my best and worst times. They were always available to hear me discuss my research and brainstorm new ideas with me. Thank you for all your help and for believing in me.

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List of Acronyms

GEO	Geostationary Orbit
ISS	International Space Station
NASA	National Aeronautics and Space Administration
SFU	Simon Fraser University
SpaceX	Space Exploration Technologies Corp.
UN	United Nations
UNOOSA	United Nations Office of Outer Space Affairs
US	United States

Chapter 1.

Introduction

Colonialism has long focused on advancing “personal and corporate interests” (Lees, 2020, p.1). For example, The East India Company saw Europeans exploit opportunities for growth and profit by personally supervising districts that were previously administered by indigenous peoples (Lees, 2020). Because the East India Company acted in the name of the British Crown, its main goal was to exploit resources that would advance British trade and profit making.

Modern colonization is still focused on the glory that the expansion of territory brings, however modern colonizers look to new and different lands for expansion. Since the Cold War technological advancement allows for reaching far beyond terrestrial space. Outer space has therefore become the subject of political discussion over who can access it and how they can do so. The United Nations Office of Outer Space Affairs (UNOOSA) created the 1966 outer space Treaty to enable every state to learn and benefit from exploring outer space and celestial bodies (UNOOSA, 1966). However, as this research will show, private corporations are challenging these guidelines because they impede private exploitation of space resources. To advance their agenda, private corporations are promoting a narrative that is affecting how international agreements on outer space are understood and applied. The issue considered by this research is how Space Exploration Technologies Corp. (SpaceX) describes its project to go to Mars, and how this narrative challenges the UNOOSA’s guidelines on space exploration.

The importance of this project lies in the fact that the corporatization of celestial bodies is a disruption of international cooperation, which may become a factor contributing to future interstate conflict. If one country or corporation can predetermine policies regarding the use of outer space without the participation of other countries, it will give that state an advantage. This could lead to conflicts or problems related to the exploitation, manipulation of, and unsustainable use of space resources. My aim is to, therefore, deconstruct and bring to light the power of dominant corporate narratives, and how they may set us up for these challenges.

Doing this work will help policy makers, especially within UNOOSA, to create treaties that are proactive. Until now, space treaties and other legal documents have been retroactive. Any guidelines regarding the use of outer space and celestial bodies have been written and entered into force after technology has pushed the boundaries of space exploration, occupation or use. Policies on the use of outer space and celestial bodies must be proactive as Space has become an increasingly important factor in international relations since the Cold War. States which can control outer space and celestial bodies, control the means of communication and celestial resource extraction. In the case of my research, the United States, by allowing SpaceX to go ahead and work on the Starlink and Mars&Beyond projects, enables itself to have control over the future lived reality of outer space. Because UNOOSA failed to foresee the increasing importance of private organizations in Space exploration, the guidelines signed and ratified by states which were party to the treaty in 1966 tend to be general in their scope. They lack definitions for colonization and for celestial bodies, and they do not create incentives for states to follow the guidelines and to enforce adherence to Treaty regulations. The geopolitical theorist Miriam Campanella (1991) argues that political actors can successfully build “long-term”, or proactive, policies when they are able to navigate rising “global competitions” (p. 487). As she points out, the ability to make proactive policies “depends on the agents' capability of assessing motivations, goals and alternatives, and networking agents and resources with a view to projecting new evolutionary possibilities” (Campanella, 1991, p. 487). My work argues that by studying the discourses of key actors, it is possible to identify those motivations and goals.

This research paper is organized as follows. First, the theoretical background establishes an approach to thinking about human space (any type of space) as something that is constructed through political interactions (Chapter 2). Space can be understood as a contested social object. If there is no consensus on how that object should be understood or used, because there are different political and societal actors who give conflicting explanations and narratives, these political interactions result different realities of space. Second, the methodology section lays out my approach to analyzing UNOOSA and SpaceX (Chapter 3).

This is followed by my analysis, which consists of 3 parts. First is content analysis of the 1966 Outer Space Treaty (Chapter 4). Here, I explain the process behind the choice of the UNOOSA document that I examined, which branch in the UN is dedicated to outer

space, and how certain characteristics of the 1966 Outer Space Treaty allow states to challenge the set guidelines. Second, I offer a discursive analysis of SpaceX's website. Here, I explain the two main projects – Starlink and Mars&Beyond – which I argue directly contradict the UNOOSA guidelines on the peaceful use of outer space. I analyze how the company discusses their projects and compare it to the words used by UNOOSA to describe what states and private companies can and cannot do in outer space and on celestial bodies. The third and last subsection presents a narrative analysis of Elon Musk's tweets and interviews. Here, I analyze the words SpaceX's CEO uses or omits when asked about Mars&Beyond and Starlink. This section displays the narrative created by Elon Musk to propose to the public a different understanding of outer space and celestial bodies, compared to that of UNOOSA. Both the discourse analysis and narrative analysis are presented in Chapter 5.

Having completed the analysis section, the discussion chapter (Chapter 6) compares the two conflicting perceptions and conceptions on the use of outer space and celestial bodies by UNOOSA and SpaceX in light of the theoretical framework presented in Chapter 2. Lastly, the conclusions summarize the research findings and suggest possible consequences of a failure in international cooperation due to a corporatization of Mars by SpaceX. I also suggest possible policy solutions for UNOOSA to become more proactive in the creation of guidelines on the use of outer space and celestial bodies, rather than remining retroactive.

Chapter 2.

Theoretical Background

This section offers a conceptualization of the terrain of celestial bodies through a geopolitical framework. The framework presented here helps explain “the relation between man and his geographical environment” (Hagan, 1942, p. 478), which I will apply to our perception of outer space, this being our next frontier for a new beginning.

Before diving into the geopolitics of outer space and celestial bodies, I want to introduce the understanding of the physical space by Henri Lefebvre (1991). This framework contextualizes my explanation of outer space and celestial bodies, and of how our understanding of the use of these resources is connected to means of production. The author describes space as being socially constructed and, therefore, acquiring three different definitions: “perceived”, “conceived” and “lived” (Lefebvre, 1991, p. 38-39).

With perceived space, Lefebvre (1991) describes our general understanding of a physical space, as seen by society. An example can be our understanding of the differences between a working space and one dedicated to leisure. Our society has taught us that our behavior at work differs to when we are at home. We, therefore, perceive working spaces differently than we perceive leisure spaces. By conceived spaces, Lefebvre (1991) describes those practices and actions that give birth to a certain reality of physical space. An example of this would be the decisions taken by key actors about how to produce a particular space, and the values that drive those decisions. For example, in my research, organizations, such as UNOOSA and SpaceX, struggle with each other about the use of outer space. Their struggle is driven by conflicts which are shaped by differences in core values.

Lastly, Lefebvre (1991) describes lived spaces as the result of perceived and conceived space. Lived space is the space of social relations, and those social relations are organized according to how we have been taught to perceive space, as well as how those spaces have been conceived by key actors. This means that decisions about how to conceive a space are socially constructed and these choices shape who benefits from this conception and who is harmed as a result of that particular organization of space.

Consequently, lived space can produce significant social outcomes such as class, race, and gender inequality.

As we will see in the analysis to come, UNOOSA and SpaceX have created contrasting sets of perceptions and conceptions of outer space leading to conflicting understanding on how these resources should be used. On one hand UNOOSA conceives outer space that should be used and benefit everyone, independently on the State's "economic or scientific development" (UNOOSA, 2008, p. 4). The lived space of outer space and celestial bodies would be one where international relation is built on equality and cooperation. Contrary to this, there is SpaceX who is creating a conception of outer space and celestial bodies that is based on private use. The lived space of these resources would be one where benefits and privileges remain in the hands of those who are already in a privileged status in society.

Lefebvre offers a general theory of the construction of space, which other scholars offer insights into the significance of spatial construction for understanding colonialism. For example, Charles Hagan (1942) argues that the way in which individuals organize and connect to a geographical area happens through associating land with economic gains, as well as to social and cultural practices surrounding the use of that land. The power of the state relies on owning territory, and in order to thrive and grow, it needs to expand its space, or territory (Hagan, 1942). This can be done by creating "spheres of influence" or, more simply, "colonies" (p. 479). Having said that, before a state can be considered as such, it needs individuals who are "bound to its soils". Without either the "state cannot exist" since the "territory or space […] is extremely important to political life" (Hagan, 1942, p. 479). Once this concept is established, a state can thrive only through expansion. Therefore, geographical and physical boundaries are necessary to show how well a State has grown and thrived, or whether it is dying through a shrinking territory.

Similarly, Gearoid O' Thuatail (1996) argues that geography and politics met when cartography was invented, because it was then that governments could organize their territory more systematically. This organization made the territories easier to govern, therefore "transform[ing] seized space into a legible, ordered imperial territory" (1996, p. 4). Furthermore, in connection with previous arguments on colonialism and the existence of a State, O' Thuatail (1996) argues that "geography is about power […] not a product of

nature but a product of histories of struggle between competing authorities over the power to organize, occupy, and administer space" (p. 1). Since the beginning of statehood and geopolitics, lived spaces have been conceived through a lens of power-struggle. O' Thuatail (1996) interestingly describes the action of creating boundaries and spheres of influence as "an active writing of the Earth" (p. 2). The powers behind this re-writing of Earth are those that are benefitting to this days as they re-organized space in such a way that it would "fit their own cultural visions and material interests" (O' Thuatail, 1996, p.2)

When the theorist discusses the writing of a territory by a State, O' Thuatail (1966) argues that our understanding of the meaning surrounding those spaces, such as how we understand that the land we live in is Canada, is built on discourses and symbols intrinsic of specific meanings. These symbols can be the national or provincial flags and our passports, and the constant differentiation between our customs and those of different states give meaning to the territory. Another way to highlight a State's ownership over a certain space is through language. O' Thuatail (1966) uses the example of his birthplace to explain how language plays a significant role in determining one's identity and belonging to a space instead of another. For instance, close to the border between Northern Ireland and the Republic of Ireland, if one called the city in Northern Ireland "Derry" or "Londonderry" held a political meaning. That is because the latter "acknowledge[s] the legitimacy the British writing of Irish space [which] oriented [it] around the capital of the British empire" (O' Thuatail, 1966, p. 3). In other words, Ireland was written, or created, by the British and based on their needs and interests. The British created the meaning of Ireland by transmitting their own conception of it.

Similarly, outer space has been understood as the next frontier for states to compete over, occupy, and, eventually, administer. Since the 20th century space race and the first walk on the moon by Neil Armstrong, an American astronaut, outer space has become a symbol of prestige and power. To this day, the United States has been celebrating its scientific and technological success by describing space exploration as "an example of American ingenuity, spirit and potential" (Wall, 2019, par. 2). However, the U.S. also recognizes that it has been 50 years since the country has made such a significant technological statement of such importance to international relations. With this in mind, SpaceX and Donald Trump have boasted that an "even bigger leap" (Wall, 2019, par. 1) is soon coming with more missions to the Moon and, more importantly, with the Mars mission.

This example suggests that contemporary geopolitics have shifted from territorial into boundaryless understandings of spatial conquest. Since the First World War, Roman Law has been used to determine a state's territoriality (Collis, 2017). UNOOSA has put the applicability of this framework into question.

This is because we are no longer discussing spaces that we can easily reach but, rather, we are reaching into spaces that have just been discovered and perceived as possible new locations for humanity. As O' Thuatail (1996) would argue, they have yet to be drawn and organized by State powers who are currently doing so through the construction of narratives that would create the lived experience of space around that state's needs and interests. In summary, the arguments made by Hagan (1942) and O' Thuatail (1996) over the attribution of power is linked to an expansion and organization of the space occupied, can be seen again in the upcoming missions towards the Moon and Mars (Cornish, 2019; Wall, 2020).

As history has taught us, colonies are often exploited for their resources, consequently, limiting their ability to become a growing and thriving state. Such understanding of space can be linked back to Lefebvre's (1991) description of space as "perceived", "conceived", and "lived" (p. 38). During the conquest, the so called "New World" was perceived as a rich resource for Europeans. The various branches of the religious institutions, different European nations, and commercial enterprises struggled with each other over how to conceive the "New World." Ultimately, they conceived a space called a Colony. This space was constructed in such a way that it reinforced the position of Europeans and left the original peoples of the "New World" in a situation of exploitation, poverty, and corruption. Colonies become geographical territories in which existing socio-cultural practices and the political structures are not considered. Rather, they are only perceived for their materiality. This is the lived space of the colony.

This perspective on how we understand space can be linked back to corporatized colonialism. For instance, the East Indian company "governed vast territories from the 17th to 19th centuries" and their main goal was to exploit the resources available in East and Southeast Asia for trade (Byers, 2016, par. 6; Britannica, 2019). These transactions were done in the name of the British Crown, and therefore, the East Indian company "acted as an agent of British imperialism" (Britannica, 2019, line 6). The discourses created about

the colony, and the people who lived there, worked to reinforce a perception and conception of that space that benefitted Europeans and subjugated non-Europeans.

This discussion reflects back to the argument previously made. Both, the East India company and SpaceX, are political actors, one representing British imperialism in the 17th to 18th century, and the other a geopolitical advancement of the US government in the 21st century. Such similarities are strengthened by the growing relationship between SpaceX and National Aeronautics and Space Administration (NASA) that culminated in the most recent launch of NASA astronauts to the International Space Station (ISS) with rockets created by SpaceX (Smith, 2020). This partnership gives the Mars mission a bigger role in the territorial advancement of the US, giving it increasingly more influence over the international sphere. Additionally, SpaceX is also known for its goal to move our societies to Mars, which is now also shared with President Donald Trump. Together, SpaceX and the United States government are publishing discourses and narratives about outerspace and Mars in particular, which push a particular perception of space. This could lead to it being conceived in ways that are not beneficial to all human beings. The question that arises is whether SpaceX's project to go to Mars falls under the category of colonization, and if so, how UNOOSA should react to such challenge.

Chapter 3.

Methodology

In order to answer this question, I chose three methodologies: content analysis, discourse analysis, and narrative analysis. Together they will show the contrasting perceptions of outer space put forward by SpaceX and UNOOSA's 1966 Outer Space Treaty. Based on these contrasting perceptions it is possible to suggest whether and how space exploration and exploitation will affect conceived and lived experiences of outer space in the future, and establish the foundations for proactive policy-making by UNOOSA.

I began my research with content analysis of UNOOSA 1966 Outer Space Treaty. Klaus Krippendorf (2018), argues that content analysis is "a technique for making replicable and valid inferences from texts […] to the context of their use" (p. 24). In other words, it offers a way to generate certain interpretations of the texts while taking into account the context in which the texts were created. That said, these interpretations have to remain quite objective as they must be replicable by other researchers.

My analysis of the 1966 Outer Space Treaty focuses on identifying what uses of Outer Space and celestial bodies the organization defines as legal and illegal. I use content analysis because, as Krippendorf (2018) explains, I want to show why this text was created, and its meanings and repercussions within international relations. To this end, before diving into content analysis, I researched the main branch in the United Nations (UN) that focuses on Outer Space, which is the UN Office of Outer Space Affairs (UNOOSA) as well as its subsidiary, the UN Committee of the Peaceful Uses of Outer Space (COPUOS), which was in charge of creating the Outer Space Treaty.

During the content analysis of the Outer Space Treaty, I first did a close reading of the reasons why the UN General Assembly adopted the Treaty in 1966. Secondly, I read each article contained in the Treaty and highlighted the sentences that indicated the conception of Outer Space and celestial bodies as resources that can only be used for the purpose of international scientific advancement and for promoting cooperation among states. Secondly, I looked for definitions of celestial bodies and Outer Space to have a clearer picture of what is included and excluded in the word "celestial bodies." For

example, is Mars considered a celestial body, according to the treaty? I also searched for descriptions of colonization and appropriation of celestial bodies so that I would have a clearer idea of whether I could define SpaceX's mission to go to Mars as colonial. Thirdly, I searched for any indications of the roles of private corporations in the use of Outer Space and celestial bodies. Lastly, I looked for indications of consequences for states and corporations that deviate from the set guidelines. As part of this last point, I also researched the meaning of soft law and how UNOOSA is able to enforce the guidelines on the states party to the Treaty.

The second methodology chosen for this research is discursive analysis. As explained by Norman Fairclough (1995) discursive analysis is an approach to studying the meaning-making of symbols and words that are intrinsically connected to social practices (p. 357). In other words, our discourses – meaning the words we choose to use or omit – are socially influenced which "helps sustain and reproduce the sense of status quo" (p. 358). In my research, discursive analysis helps me show that there is more information behind the word-choice employed by SpaceX, in the description of their projects, than the company lets seep through. Through this analysis I show that 'officially' SpaceX is trying to dismantle unequal power relations by using words of inclusion when describing their projects. However, I also argue that it is actually reproducing these same unequal power relations by creating a conception of Outer Space and celestial bodies as resources that can be used only through their corporation. Hence, SpaceX and the US government can decide who can use SpaceX technology, to have access to Mars or the Moon, and who cannot.

To do this analysis, I first created a timeline that started with the company's foundation in 2002, and then I selected its major accomplishments until the year 2020. Secondly, I justified the importance of including these accomplishments in my research, by relating them back to my major argument – being that SpaceX is creating a certain perception and conception of Outer Space that directly contrasts that of UNOOSA. Thirdly, I analyzed SpaceX's website. I looked for specific words that would indicate the positionality of the company in relation to the use of outer space and celestial bodies, particularly of Mars. My analysis starts with the earliest announcements by SpaceX. Unfortunately, Twitter does not allow me to go as far as 2009, the year I which the company joined Twitter, so I start with the earliest announcements by the company as captured in online news articles. Because I argue that SpaceX is challenging the

guidelines in the 1966 Outer Space Treaty, I was looking to see if the private corporation would use words that directly go against what outlined in the Treaty – such as "appropriation" and "occupation" (UNOOSA, 2008, p. 4, Article II) of celestial bodies, which are present in the Treaty – or if it used other words that sparked similar connotations but that would not be directly in contrast to UNOOSA.

Lastly, the third methodology present in my research is narrative analysis. Mariana Souto-Manning (2012) explains that narratives are "ways of systematizing human experience[s]" (p. 162), meaning that narratives are like stories that allow us to interpret and understand the events happening around us. Consequently, narrative analysis is used to "connect microevents to broader discourses" (p. 162) by interpreting those stories told by other individuals and societal actors. In the case of my research, I am analyzing the narratives of SpaceX and its CEO, Elon Musk, that are created to challenge the guidelines on the peaceful use of Outer Space.

My analysis started by looking at how Elon Musk describes his projects during interviews. I particularly looked at his word-choice, the words he uses and those he decides to omit, when discussing the Starlink and Mars&Beyond projects. To further understand the narrative used by the corporation and how it allows it to challenge UNOOSA, I also analyzed Elon Musk's twitter posts. Both, his interviews and tweets, gave me a more intimate understanding of the company's positionality because when speaking in these public media, the CEO is forced to use fewer technical or scientific words. When answering questions about his plans regarding the use of Mars and outer space, for example, he is forced to be more direct.

My narrative analysis also follows the same timeline I created for the discursive analysis. I started by looking at the first interviews and tweets by Elon Musk that talked about the founding of SpaceX, his hopes and goals for the corporation and future projects. I then looked at the different achievements by the company and at how Elon Musk spoke of them in relation to the bigger narrative – that SpaceX creates a specific narrative that allows it to challenge the guidelines on the peaceful use of Outer Space. The timeline starts with the foundation of SpaceX in 2002, continuing with its first successful launches in 2006 and 2008, first rocket launch and return to Earth in 2010 and 2015, first creation of a future passenger rocket in 2018 and, lastly, the first crew launch of NASA astronauts to the International Space Station (ISS) on May 30, 2020.

The three analytical processes show how SpaceX is working towards creating a brand new understanding of Mars through a narrative that positions the company as forward-thinking. More specifically, I used these methodologies to show that SpaceX is writing a conception of Mars that justifies the corporatization of outer space., Specifically, SpaceX argues that there is no hope of a brighter future for the generations to come unless it explores and eventually occupies outerspace. This will create a lived experience of Mars that will enable the US to profit from its use. Contrary to this construction of outer space is UNOOSA who stands for an equal use of Mars and outer space resources among every state part to the treaty. I present this analysis on continuation.

Chapter 4.

Content Analysis of UNOOSA 1996 Outer Space Treaty

I began the process of content analysis (Krippendorf, 2018) by researching the specific branch in the United Nations that deals with the legal aspect of the use of outer space and celestial bodies. Given that the branch in question is the UN Office of Outer Space Affairs (UNOOSA), I then focused my research on the *United Nations Treaties and Principles on Outer Space* (UNOOSA, 2008). This is a collection of treaties and agreements that have been adopted by the UN General Assembly. I then looked at the "Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer space, including the Moon and Other Celestial Bodies", also known as the 1966 Outer Space Treaty, (UNOOSA, 2008). The reason for only selecting this treaty, out of the many agreements and declarations present in the collection, is because of its focus on what states can and cannot do with relation to celestial bodies – such as Mars – which is the focus of this thesis.

During my analysis, I learned that the treaty was adopted by the General Assembly in 1966 and it was signed and ratified by 110 countries, the United States included (UNOOSA, 2020). When a treaty is signed and ratified, every state that is party to the treaty is bound to follow the guidelines agreed upon. The Treaty was a product of the time in which it was created, which was the Cold War. Specifically, it was a response to the launch of Sputnik by the Soviet Union. At that time, it was convenient for the party states to have rules over the use of Outer space and celestial bodies, particularly for the US and USSR There was a real fear that the so-called "Space Race" between these two great powers might escalate into a larger conflict. Consequently, the treaty broadly describes what States ought to do to maintain peaceful Outer space exploration. The enforcement mechanisms rely on other countries to "call out" states that deviate from the guidelines, which means that it can be difficult (by not impossible) for UNOOSA to enforce the Treaty guidelines.

As argued by Charles Hagan (1942), for states to thrive, they must expand their territory, power, or influence. During the Cold War, outer space was seen as the perfect

way to achieve this. Once states could send satellites into orbit, they could occupy a strategic level of control over the means of communication. However, in order to succeed, states needed to be able to keep their research from being distributed to the other states party to the treaty. As a result, it became inconvenient for states party to the treaty to abide to the regulations set by UNOOSA. For the guidelines established in the treaty to work, states needed to keep each other accountable for actions that deviate from the correct use of resources. Therefore, when UNOOSA came up with new agreements to update the guidelines in the 1966 Outer space Treaty, fewer and fewer states agreed to sign them. Additionally, there are no benefits that would incentivize states to sign them nor consequences if they decide not to do it. By not signing them, the state does not have to recognize the guidelines as something they must follow. An example of this is the Moon Agreement, which was adopted by the General Assembly in 1979 but it was not ratified by many states, specifically by the US and Russia (UNOOSA, 2020).

Now that I clarified the background information of UNOOSA and the 1966 Outer space Treaty, the following is my analysis of the content of said Treaty. Starting from Article I, UNOOSA (2008) clearly states that:

> "the exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind" (p. 4).

From this sentence it is important to highlight the statement "shall be province of all mankind" because it does not leave up to the interpretation of the States to decide who should have more control over outer space and celestial bodies. This is further clarified by describing Space exploration and use as activities that can be carried out by all states party to the treaty. In case some states do not have the means to do so or the technology, they should still be able to be included in any scientific discovery – "irrespective of their degree of economic and scientific development" (UNOOSA, 2008, p. 4). This is done by having all states participating in Outer space activities share any information and findings gathered during their missions and research. Similar statements are present throughout most Articles, but it is particularly underlined in Article XI:

> “in order to promote international cooperation in the peaceful exploration and use of outer space, States Parties to the Treaty conducting activities in outer space, including the Moon and other celestial bodies, agree to inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of the nature, conduct, locations and results of such activities” (UNOOSA, 2008, p. 6).

The reason for UNOOSA to promote the sharing of projects and findings by all States Party is to reduce as much as possible any interferences to international cooperation. The latter is another aspect that is extremely important to UNOOSA and it is present in all articles. The reason it is important to promote for international cooperation and a “peaceful use of outer space, including the Moon and other celestial bodies” (2008, p. 3-8) is connected to my argument that a failure in international cooperation, as a consequence to a rise in competition, may lead to a rise of conflict among states, which may resemble that of the 20th century Space Race. While in the 1960s, that conflict would have been between the US and USSR, today it would have a much larger scope. This is due to a rise in number of private corporations in many states, which are not only competing nationally, but also internationally, as well as the number of states with active space exploration programs.

Since there has been an increase in numbers of private corporations in the aerospace industry, and they are now playing an increasingly important role in the new space race, I was interested to learn if and how UNOOSA was able to foresee such movement and plan for any limitations directed towards private corporations. Interestingly, governmental and non-governmental entities are only mentioned in Article VI, where UNOOSA states “the activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty” (2008, p. 5). In other words, any mission or object sent by a governmental or non-governmental organization remains a responsibility of the state party from which the activity was carried out. Therefore, any consequences for a deviation, by a corporation, from the Treaty guidelines is left to the state in which that entity is legally incorporated.

In the case of a failure to address the unlawful activity by the State, other States Parties can request that the State's activity is reviewed by other states party to the treaty, and also by UNOOSA. As stated in the Treaty, Article IX:

> "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 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" (UNOOSA, 2008, p. 6).

The reason for UNOOSA's lack of consideration for private corporations is because the former only deals with States and their governments. If UNOOSA were to address private corporations similarly as it is done with states, it would legitimize the position of the private company as an equal to the state. Consequently, the company would be allowed much more freedom of action than as an entity under the state's surveillance. That is because the state is considered the highest entity in the hierarchy of law enforcement, above it there is only the UN, which is a collaboration of many states (Boundless, n.d.; Cohen, 1961). Any enforcement of guidelines is, therefore, dependent on the states parties involvement in ensuring a peaceful and cooperative use of resources. Having said that, UNOOSA could implement its policies on the use of outer space and celestial bodies in such a way that states party to the treaty are incentivized to follow the guidelines and ensure their companies do the same. To reiterate my suggestion from the introductory chapter of this research, UNOOSA needs to establish proactive policies. Meaning that the organization must try to foresee the development in Space exploration so that it can create policies that are able to tackle any challenges to international cooperation.

Another important aspect in the 1966 outer space Treaty is the statement on "colonization" and "national appropriation" (UNOOSA, 2008, p. 4). Since outer space and

celestial bodies are meant to be province of all humanity, states parties are legally not allowed to appropriate or occupy them. This is stated in Article II, “Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means” (2008, p. 4). This is another instance in which UNOOSA is reiterating its vision of outer space and celestial bodies as resources that shall be used for everyone’s benefit and in accordance to international cooperation. That is, if no one state can appropriate a planet, the risk of another state entering into conflict over the appropriation of that same resource, is much lower. This means that even the first landing on the Moon by the United States, in 1969 when Neil Armstrong planted the flag of the United States, the US did not actually acquire the Moon’s territory. It was only to symbolize that the US were first ones who were the first ones to break the limits to what humanity can do and walk on the Moon. The reason why it could only be a symbol and not an actual privatization of the celestial body is because it happened after the ratification of the Treaty.

During the content analysis of the 1966 Outer Space Treaty I also searched for definitions of outer space, celestial bodies, and colonialism because I wanted to understand whether SpaceX’s project to go to Mars could be qualified as colonial. I was also looking for answers to how the US and SpaceX were able to continue with a project that seemed to go against the treaty. Interestingly, I could not find definitions for outer space nor celestial bodies. This could have given the treaty a stronger stance towards modern projects in outer space. As of now, there is a general understanding that Mars is one of the celestial bodies. However, having a definition by UNOOSA would create greater clarity about the status of the planet, creating the conditions to further specify how its resources can be used. The same applies to outer space, if UNOOSA would have had a well-defined explanation of what is included in the word outer space, such as how deep into space satellites can go, it would have greater leverage to specific which projects are desirable or acceptable, and which are not. This could have helped with reducing pollution in outer space, which is dangerous to the soundness of satellites and astronauts going to Space.

In terms of colonization, UNOOSA does not use that word, rather, it uses occupation and national appropriation. This is quite interesting because, as I will explain later, the word colonialism is often used to refer to locations whose populations have been subjugated by another power. By using occupation and national appropriation it can be

argued that UNOOSA assumes that there is no life on celestial bodies, therefore it does not recognize exploration by States Parties as colonial activities. Having said that, UNOOSA does have a description for occupation and appropriation, which it can be read in Article IV “the establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on celestial bodies shall be forbidden” (2008, p. 4). In other words, appropriation and occupation is related to military purposes. By locating military equipment on celestial bodies and in outer space, it gives the idea that these resources are used for conflict and only by the state that allowed the activity. However, if a state or its corporation creates a project that aims at settling societies on a celestial body, UNOOSA does not have a specific restriction for such activity, unless it is described as ‘appropriation’ or ‘occupation’. This made me think about SpaceX and its project to go Mars and how it may be one of the reasons that allowed it to challenge the 1966 Outer Space Treaty.

Given the findings from the analysis here above, it is safe to conclude that since 1966, UNOOSA has described outer space and celestial bodies as goods and resources that must remain available to all member states of the UN. Additionally, their use and the consequent scientific advancement shall not be restricted to those who have the means to explore and research. On the contrary, all states should have access to other states’ research and findings. The reason for the importance of sharing information and technologies is because UNOOSA is fostering international cooperation as a way to deter states from entering into conflict due to a competitive use of outer space and celestial bodies. However, international cooperation can only be fostered if every state signs and ratifies each updated agreement on the use of outer space and celestial bodies. As shown with the 1979 Moon Agreement, states do not find the outlined restrictions as benefitting their interests. This leads to fewer ratifications, meaning that those states who did not sign and ratified the 1979 Moon agreement only have to abide to the guidelines set in the 1966 outer space treaty. As previously stated, due to a lack of definitions and specifications in the latter treaty, states can argue their way around the restrictions through a set of discourses and narratives. The following chapter will be dedicated to the analysis of said discourses and narratives which allow SpaceX, a US based company, to create and actualize projects that are actively challenging the 1966 outer space treaty.

Chapter 5.

Analysis of SpaceX

As previously indicated, in this section I analyze SpaceX through discursive analysis and narrative analysis to show how the company perceives outer space, and specifically Mars, differently from UNOOSA., As explained in Chapter 3, Methodology, the analysis presented in this chapter is organized according to a timeline of SpaceX's major accomplishments since its founding in 2002 (Figure 1).

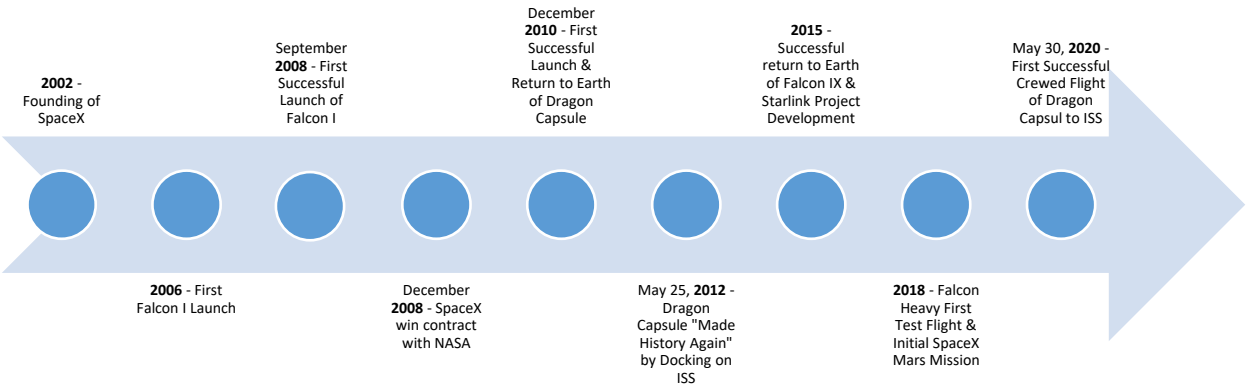

Figure 1:SpaceX's Timeline

Note. Table created by Franzini Benedetta, the information is taken from Eldridge, A. (2020, July 23). SpaceX Retrieved August 13, 2020, from https://www.britannica.com/topic/SpaceX

5.1. Discourse Analysis

The earliest interview of Elon Musk about SpaceX was published digitally in 2003 by *SpaceNews*. Elon Musk explained that SpaceX was financed by himself and he wanted to prove that his company "can build a reliable, low-cost rocket" (Berger, 2016, par. 3; Kelly, 2020). Since the beginning of his company, Elon Musk highlighted plans to develop vehicle launches, such as "suborbital tourist launches" (Berg, 2016, par. 9). In the same interview he calls his company "our Holy Grail" which I found quite interesting because that name has both a religious and agnostic meaning. On one hand, the Holy Grail was said to be the cup from which Jesus was believed to have used. On the other, there is the agnostic meaning, which refers to an object or a project that many want to and are trying to achieve but not many succeed (Merriam-Webster, n.d). In other words, Elon Musk described his company's as one of the few to have succeeded in building cheaper and yet reliable and well-functioning rockets. This statement is quite in-tune with his later descriptions and announcements regarding his company's projects – such as "making history" (SpaceX, 2020). Additionally, in another interview, Elon Musk was already discussing the possibility to go to Mars, and he stated that "the path by which I hope to get there is to get the public enthusiastic about the possibility" (SpaceRef, 2001, par. 1). This is another example of Musk's bigger narrative of creating hope and enthusiasm in the public that SpaceX will bring them to Mars.

The next important achievement by SpaceX, in 2006, was Falcon I, which was created in such a way that it reduced expenses. This achievement also marked the company's entry into the aerospace industry. SpaceX became the first company that made spaceflight significantly cheaper (Eldridge, 2020). Musk's description of Falcon I was "an affordable option to launch satellites, cargo and possibly people" (Malik, 2006). His aim is to make spaceflight as affordable as air travel, through the application of Moore's Law. That is, the speed of advances in computation would allow spaceflight to become as affordable as air travel (Rotman, 2020; Malik, 2006). This again fits with his bigger narrative of wanting to make spaceflight affordable for the masses. This message is reiterated in later projects as well, such as Starlink and Mars&Beyond. However, Musk never quite specifies who exactly would benefit from this affordability. Would it be only designed for US citizens or would it be available internationally? Nevertheless, Musk aims

at making SpaceX the company on which individuals and the US government will be dependent to reach Mars and beyond.

In 2006 SpaceX received a $1.5 billion contract by NASA to ship cargo to the International Space Station (ISS) through 12 planned flights (Berger, 2014, par. 13). That was thanks to the successful launch of Falcon I, and by September 2008 SpaceX became the first privately owned company to send a rocket into orbit. As early as 2006 the relationship that NASA was building with SpaceX was becoming visible, and it was apparent that the US government and SpaceX were becoming interlinked in their mutual interests and activities.

In 2010, SpaceX was able to successfully launch the Dragon capsule into orbit which successfully and safely returned back to Earth for future use. This was an important achievement for the company because it marked one step closer to creating rockets that can taxi people and cargo from Earth to the ISS and other planets. This success was described by the online Space magazine, *Space.Com*, as “the first time a private unmanned space capsule was recovered safely back on Earth (Howell, 2020, par. 16). In 2012 the Dragon capsule made history again (Eldridge, 2020) because it became the first commercial spacecraft to dock with the ISS, to which it successfully delivered cargo. In August that year, SpaceX announced that it had won a contract from NASA to develop a successor to the space shuttle that would transport astronauts into space” (Eldridge, 2020, par. 4).

The year 2015 was also important for SpaceX because the Falcon IX rocket was successfully launched and returned back to Earth and because the company began promoting their new project – Starlink. The latter was designed to put in place “a global communications system that would be larger than anything that has been talked about to date” (Soper, 2015, par. 4).The Starlink project was first introduced in 2015 (Mann, 2020), and its aim was to create a “global network [that] will deliver high speed broadband internet to locations where access has been unreliable, expensive, or completely unavailable” (Starlink, 2020, par. 1). This short description tells us that the project is meant to benefit every state that decides to adopt it.

The inclusivity of the project fits in the UNOOSA guidelines for the peaceful use of Outer Space, so why do I argue that SpaceX’s Starlink project has a conflicting narrative

compared to the one of UNOOSA? The conflict becomes more visible when understanding that by creating “cheap satellite-based internet to the masses” (Wattles, 2019), SpaceX is attempting to be the leading actor for taking over communication worldwide. Starlink’s profits could be used to sustain SpaceX’s other plans, such as Mars&Beyond (Wattles, 2019; Wall, 2019). In one of Elon Musk’s recent tweets, he described Starlink as “designed to serve the least-served” (June 24, 2020, Twitter). Once again, his narrative is that this project is for the benefit of everyone, especially those who are now struggling with poor or expensive connections.

Interestingly, I could not find a list of States that Starlink would be covering. All I could find on Twitter, *Space.Com*, *SpaceNews*, *GeekWire*, CNBC, and SpaceX’s website was that Starlink aims at global coverage with low cost broadband internet connection, starting with the US and Canada by the end of 2020. The only online magazine that discussed other locations for the testing of Starlink is *TechCrunch* which said that testing of Stralink will be available in “high latitude” locations, which would include Germany, as specified by Elon Musk (Etherington, 2020, par. 2). In April 2020 Musk also announced that Starlink will “hopefully start serving Africa early next year” (Musk, 2020, Aril 27). To that post, some his followers asked about other countries such as Iraq and China, but he has not given an answer. I found this lack of communication important to note because it gave me the impression that SpaceX does not wish to commit to an actual global coverage, as there may be countries who will remain outside of its scope. One twitter user commented that “only local regulators / government can hold it [Starlink] back from being available in your country” (Gays4Tesla, 2020, June 12). This user is partly right, because local governments can decide against Starlink and support local internet providers instead. On the other hand, governments’ decisions against SpaceX’s internet satellites can be based on political animosities. SpaceX is a US based company, and the U.S. Air Force is an important investor. If Starlink were to become a major internet provider internationally, then the U.S. would be in control of the means of communication for every state under Starlink coverage.

As I mentioned in the previous section, the 1966 Outer Space Treaty dictates that all projects and scientific findings must be shared with all states party to the treaty, not monopolized for profit and further investing for private projects. Starlink, however, would not only take over the means of communication, but it would also occupy a large amount of outer space through the launch of thousands of satellites. The danger caused by such

a heavy deployment of objects into space is that it increases the likelihood of collisions, which leads to an increase in space debris (Byers, 2017). This goes against the outer space treaty, because it decreases the chances for other states to launch satellites, as each member state can apply for a spot on the Geostationary Orbit (GEO) through a system create by the UN. However, the slots are limited as the GEO has a limited capacity. Starlink would, therefore, deviate from UNOOSA guidelines in many ways.

The second project discussed in this research paper is Mars&Beyond. This project was first announced in 2016, and 2018 was the mission start date for the launch of the Falcon Heavy rocket (Boyle, 2016, par. 4). The mission statement of SpaceX's Mars&Beyond is "making history" (SpaceX, Elon Musk, 2020, par. 1). This language of making history is not new to us, but rather has been one of the main characteristics of European imperialism. The comparison between European imperialism and space exploration was explored in the previous section. It is important to reiterate here because language such as this positions SpaceX as a means for the government of the United States (US) to occupy and take control over Mars through its conception of the space (Byers, 2016). I argue that SpaceX is a means for the US to take control of the red planet because it is a US company, making the state responsible for any activity and project carried out by the company (UNOOSA, 2008, Article VI, p. 5). As was explained in Chapter 4, the Outer Space Treaty states that if states party-to-the-treaty, or their corporations, carry out activities that do not adhere to the guidelines or that cause harm to other countries' satellites or missions, UNOOSA will consider the offenders legally responsible for their actions. By making states legally responsible for any governmental and private corporations project, the latter feel legitimized to then take credit for the successes as well.

Another example that shows SpaceX's intentions to create a perception of Mars as close to Earth and as a livable planet can be found on the company's website under the "Why Mars" tab (SpaceX, 2020, par. 2). Here, Mars is described as "one of Earth's closest habitable neighbors" (SpaceX, 2020, par. 2). By describing Mars as "Earth's closest habitable neighbor" and the project as "Making history", SpaceX situates itself as the company through which we will be creating a new history by starting life on a new planet. Furthermore, thanks to the company's technological advancements, Mars is much closer to Earth than ever before.

Other than the examples discussed here, the language used on SpaceX's the website is plain and scientific, describing the logistical aspect of executing the projects, and the characteristics of Mars as a planet. The website is also built to show the timeline within which they anticipate the projects to be achieved. This, together with the choice of language used, create a sense that SpaceX has a well calculated plan, and it creates a sense that the company is very open sharing every step and stage of the project. In doing so, it allows everyone to feel part of the project as they can access material about each mission and technological advance.

The last date on my timeline is May 30, 2020. On this date SpaceX had its first successful crewed flight of the Dragon capsule to the ISS. This is a very important milestone for SpaceX and the US government because it means that SpaceX is a step closer to bringing cargo and eventually astronauts to Mars. As stated by SpaceX (2017) they are "supporting the creation of a permanent, self-sustaining human presence on Mars" (2017, September 28). Interestingly, SpaceX does not mention occupation at this time, instead they use the term "permanent presence of humans." As previously discussed, the words occupation and settlement or colonialism, have strong negative connotations. Permanent presence mainly gives the idea that one day we will wake up on a new planet and start over. These words paint over the activities that would need to make the planet inhabitable. Musk has famously suggested a complete make-over of the red planet suggesting that humans could "nuke Mars" (Elon Musk, 2019, August 15) in order to create an atmosphere for us to survive. These two words also indicate that all these efforts from SpaceX and NASA were done with the aim of permanently re-locating on Mars, by the year 2060 (Elon Musk, 2016, September 27; Drake, 2017). The years leading to 2060 will not be dedicated to mere exploration and research that can be brought back to Earth, but on how we can replicate a human biome on Mars. SpaceX even created a video showcasing what permanent self-sustaining presence on Mars could look like (SpaceX, 2017, September 28).

In addition to the tweet "nuke Mars" (Elon Musk, (2019, August 15), Elon Musk posted another tweet as a response to it that said "and other planets" (2017, October 14). Again, Elon Musk is both showing his ambitions for SpaceX's future achievements and, whether he is doing it consciously or unconsciously, he is creating a narrative in which celestial bodies are perceived as locations in which humans will permanently relocate. In doing so, SpaceX is directly challenging UNOOSA Outer Space Treaty's perception of

celestial bodies as resources for exploration and research, not permanent relocation as that would mean national appropriation by the State from which the project was created and actualized.

Throughout the years, Elon Musk's description of the Mars mission have been consistent in his public statements. As shown in this chapter, Elon Musk has built his company, SpaceX, on the aspiration and promise that it will be the first privately owned company to successfully make spaceflight affordable. In the years following the founding of SpaceX, he was able to prove that his rockets could be reliable and affordable. Because of this success he called SpaceX "our Holy Grail" (Berg, 2016, par. 9) during an interview. The analysis of his statements regarding SpaceX's projects demonstrated a common narrative around affordability and availability to everyone.

That said, Musk never quite specifies his definition of "everyone," and I argue that his statements are purposefully written in such a way that they make the readers feel included in the project-making process. This is quite important to underline because it brings the projects more support by the public, without making concrete commitments to inclusion. Another prominent discourse by Elon Musk is created by using the words "making history" and "Earth closest habitable neighbour" (SpaceX, 2020) when describing the Mars mission and the planet itself. It is important to highlight this discourse because it incentivises the idea that without SpaceX, our scientific advancement would not be as fast and as great. It also situates SpaceX and the US at the center of human advancement, regardless of whether the projects are in direct juxtaposition with the 1966 outer space treaty.

5.2. Narrative Analysis

My interest in Elon Musk's narrative was inspired by a quote I found on SpaceX's website for the Mars&Beyond mission:

> "You want to wake up in the morning and think the future is going to be great – and that's what being a spacefaring civilization is all about. It's about believing in the future and thinking that the future will be better than the past. And I can't think of anything more exciting than going out there and being among the stars." (SpaceX, 2020, par 1)

This quote is meant to inspire the public in believing that our future can be better than our past and present, and it can be reached by bringing our society to Mars. By saying “being among the stars”, he describes life on the planet as a dream or as if we would be living in the heavens. This brings up images of paintings depicting beautiful night skies full of stars and angelic figures giving a sense of peace and tranquility to the idea of living on Mars. Elon Musk also uses the pronoun “you”, which directs the message to the reader making them feel personally included in the project.

After this realization, I was determined to understand whether the CEO of SpaceX is intentionally creating a narrative, through inspiring the public to invest in the project – emotionally and monetarily – or if it was an isolated event. This is when I started researching personal interviews so I could learn how he describes the projects. At the beginning, the research was mostly focused on the Mars&Beyond project, as it is the project that I am most invested in. However, I decided to expand my research to interviews on Starlink and to an inauguration video on his other company’s project, the Tesla Cybertruck. This expansion of scope allowed me to ensure that his narrative was consistent across a variety of projects, rather than a unique event. As I was reading through the interviews, I found a tweet by Elon Musk that displayed this narrative. I then decided to go on twitter to see if I could find more examples that would help showcase my argument on his narrative, and how it conflicts with that of UNOOSA. As I will show in the following paragraphs, Elon Musk’s narrative aims at making the public belief that outer space and Mars are there to be used for the enhancement of our society by referring to our societies as “multiplanetary” (SpaceX 2020), meaning that our societies will take over a different planet, probably Mars.

Diving into a narrative analysis of Elon Musk’s tweets and interviews, I found that many online space magazines and online newspapers have discussed the Mars project as colonial, meanwhile Elon Musk uses the words ‘occupation’ and ‘settlement’ instead, as seen from Figure 2 and in the quote here below (Wall, 2020; Hamza, 2018; Howell, 2019).

> “Despite a high likelihood of dying even before arriving and daily conditions hostile to human life, Elon Musk said in an interview Sunday that he'll probably move to Mars. The SpaceX and chief executive said there's a "70 percent chance" he'll get to Mars within his lifetime, with plans to permanently resettle on the Red Planet” (Hamza, 2018, par. 1-2).

Figure 2: Occupy Mars

Note: Musk, E. [@elonmusk]. (2020, March 11). Occupy Mars [Retweet]. Twitter. https://twitter.com/elonmusk/status/1237763237212553219

As discussed by Hamza (2018) in the quote here above, Elon Musk describes his intentions as permanently resettling on the red planet. This statement is in line with the bigger narrative developed by him and SpaceX because it clearly shows that the Mars project was not intended for a short-term exploration and research. On the contrary, it was created with the idea that one day SpaceX will be building societies on the red planet.

In addition to this, some tweets demonstrated the overall narrative of Mars and outer space being resources that SpaceX must privatize in order to give us access. For instance, on December 13, 2017, Musk tweeted that humans must venture beyond Earth's boundaries by creating bases on Mars and the Moon, as "the future needs to inspire". Elon Musk seems very fond to inspire people in a better tomorrow and, according to him, the future should be like "being among the stars" (SpaceX, 2020). In other words, the tweet on December 13 reiterates that living on Earth will soon not be feasible anymore, and our next frontier can only be on Mars through SpaceX.

Building on this narrative of inspiration and hope for the future, on June 10, 2017 Rajveer Singh Jolly wrote a tweet for Elon Musk that showed a letter by the former asking Musk for help in making his dream come true, becoming one of the astronauts going to Mars and "be part of the colonisers" (Rajveer Singh Jolly, June 10, 2017). Musk response

came on the that same day saying that “we are developing the interplanetary rocket and spaceship to allow anyone to travel to the moon, Mars & beyond, regardless of nationality” (Elon Musk, June 10, 2017). Once again, Musk describes the Mars project as affordable and open to everyone independently of one’s background.

The rest of the responses to these threads were also quite interesting. Some were very sympathetic and cheered Elon Musk and Rajveer on by saying that “you’ll do amazing things” (Nicky, June 10, 2017). Another user described SpaceX as a company that does not look at one’s nationality, hence no matter where you are from, you will be able to enjoy SpaceX’s projects, whether Starlink or Mars&Beyond (thestrategywargamer, June 10, 2017). However, there were also users who questioned Musk’s narrative that SpaceX’s projects are affordable and available to anyone by saying that the “first couple (dozen or even hundred) of trips will be expensive, period” (Do Good, 1 Day at a Time, June 10, 2017).

The analysis of these twitter responses and posts show that on one hand, SpaceX’s narrative is in line with UNOOSA through making their projects sound available to everyone, independently of their background. On the other hand, though, there are some individuals who show that actually SpaceX’s intentions on affordability may not be quite as true as they make it sound. Additionally, by incentivizing individuals to be emotionally invested in the projects, SpaceX creates a further reason for the US government to keep investing in the company as the latter can see a return in its investments. This shows that SpaceX is challenging UNOOSA guidelines by driving emotional investments from the public because it sets up the company as the only hope for US citizens to achieve a better future. Hence it creates dependability on SpaceX, which is contrary to what UNOOSA argues for: cooperation among states so that everyone can advance together, not depend on one state and company for advancement.

The word ‘settlement’ is also used in business to indicate that an agreement has been signed or to conclude a transaction. It is important to show this additional definition, as Elon Musk is a businessman, so when he talks about settling on Mars, he not only speaks about physically occupying the space, but he may also mean it as completing a transfer of ownership (BusinessDictionary, 2020).

As I was reading and analyzing the material, I also noticed that Elon Musk gains trust from investors and the public by showing every stage of his projects, including the failures. An example is on December 5, 2018, when the Falcon rocket landed out at sea due to a complication in “hydraulic pump” (twitter, @elonmusk). Another example of failed projects was his inauguration of Tesla’s Cybertruck during which Elon Musk wanted to prove the indestructibility of the truck by throwing a rock at it. Unfortunately, there was a defect and the rock broke the glass of the automobile. Both events were made public, and in both instances the two companies fixed the issues and were able to successfully achieve the desired final product.

This communication strategy adds an interesting message to Elon Musk and SpaceX’s narrative, because it shows that the company and its CEO want the public to see them as transparent with what they are doing, and that the company is able to fix the mistakes and succeed at their second try. Keeping the public updated on the stages of the projects also creates a feeling of inclusion where everyone is participating in creating history. In other words, feeling included in the process of making history gives the citizens of the United States, and their government, the feeling of being the rightful ‘owners’ of Mars. That is because the United States will feel that they gave the possibility for other States, in the future, to move or use Mars. This means that Elon Musk conceives Mars as a resource which directly benefits the United States – it is still unclear which individuals in the US, although it can be assumed that the first ones to benefit would be those who have a higher socio-economic status as the ability to go to Mars will still be costly at the beginning. Consequently, the CEO constructs a lived reality of the celestial body that reinforces the United States and creates dependency, on both the US government and SpaceX, by those States that do not have the means or the scientific development to go on Mars themselves. Dependency can be quite dangerous, particularly when it lays on one country, because it gives the latter power over the distribution of information and possibility to use the technology to go to the red planet.

Chapter 6.

Discussion and Analysis.

To show the measures taken by SpaceX to encourage investments on the Mars&Beyond project first, I wrote a literature review describing the theoretical framework central for the argument; second, I conducted a content analysis (Krippendorf, 2018) of UNOOSA's 1966 Outer Space Treaty; third, I conducted a discursive analysis of SpaceX's website; lastly, I did a narrative analysis of Elon Musk's twitter posts and interviews in online news articles. In the literature review section, I began with analyzing how we, as a society, create an understanding of our physical space, which dictates who can use it and how. This is described by Lefebvre (1991) as the social production of space, which he then explains as being divided into three interlinked definitions: "perceived", "conceived", and "lived" (p. 38-39). The distinction between these three concepts played a major role in conceptualizing recent projects by SpaceX and the US as being tied to capitalist ideals. Furthermore, I compared SpaceX's projects – Starlink and Mars&Beyond – to the colonial practices by the East Indian company to show that colonial practices are still alive and there is a need to pressure states in signing UNOOSA's agreements on the peaceful use of Outer Space and celestial bodies.

In total, the analysis presented in Chapters 4 and 5 shows that both UNOOSA and SpaceX have carefully constructed conceptions of space that conflict with one another because both actors want their narrative to affect the public's lived experiences over the use of Space. Even if UNOOSA's narrative is built on the general understanding that outer space and celestial bodies are resources that will be subject to use by States, in one way or another, it aims at limiting their exploitation (White House, 2020). The mentality of having to use resources for personal benefit, such as profit and admiration for one's achievements, come from Western and European ideals. They can be connected to colonialism and to the view of resources as assets to profit-making and to improve the colonial power (Lees, 2020). An example of this mentality is the role of the East India company during British colonialism. The company solely viewed land and resources in India as a means to gain esteem and profit for the British Crown (Britannica, 2019). In comparison, although UNOOSA portrays similar views of the world – views that look at "the economic and social conflict that decides 'who gets what'" and that supports those

groups in power by presenting them as the “normal” or as what all States should be (Lambie, 2010, p. 60), the non-governmental organization strives for a more cooperative use of the resources among all actors, rather than letting one state exploit the resources for its own benefit. Such narrative, once again, can be seen in Article I of the 1966 Outer space Treaty which states that “the exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries […] and shall be the province all mankind” (UNOOSA, 2008, p. 4).

Corporate actors and their sponsor states get around the UN’s frameworks, and reproduce a Western or European colonial mentality through the circulation of discourses and narratives that gain public support and drive us towards particular futures. By describing Mars as “Earth’s closest habitable neighbor” and the project as “Making history”, SpaceX situates itself as the company through which we will literally be creating a new history, by permanently relocating our societies on a new planet. Furthermore, the company is often publicized as being the “first private company to successfully” launch rockets that also successfully return back to Earth to be reused, as well as “making affordable spaceflight” and, it latest achievement, was to be the first private company to “launch a crewed spacecraft and dock it with the International Space Station (ISS)” (Eldridge, 2020, par. 1-2; Howell, 2020). In other words, thanks to the company’s technological advancements, Mars is perceived as being much closer to Earth than ever before.

As shown in my research on SpaceX’s narrative, Elon Musk does not use the word colonialism but, rather, he uses the words occupation and settlement Although all three words have been used to describe oppressive powers during colonial times, in this research ‘occupation’ and ‘settlement’ mainly highlight how SpaceX would be the only company to bring US astronauts to Mars (Online Etymology Dictionary, 2020; Musk, 2020, April 17-18). This is because colonization assumes that a stronger power is taking over the space originally governed by another power (Colonialism, n.d.). However, as of now, no one is settled on Mars, therefore the terms occupation and settlement give the idea that SpaceX and the US will be controlling the planet through settling bases first-hand and, later, societies. As previously mentioned, in case NASA will find life on the red planet, through their robot Perseverance, the ethical discussion over settling our societies on the planet would change drastically. That is because there would be discussions on how to classify that life, which would then lead to making decisions over whether the

Mars&Beyond project could become exploitative of that life and what would happen to the latter. That being said, my research will assume that life on the red planet is not present as there is no proof of it yet.

According to Lefebvre's theoretical framework UNOOSA and SpaceX have contrasting narratives that create different perceptions of the potential of outer space, as well as different conceptions for the future use of outer space and celestial bodies. While UNOOSA is creating an understanding of the use of outer space and celestial bodies as global commons, meaning they are open to peaceful use by every state, SpaceX pushes for an exclusive control over celestial resources. This is evident by US President Donald Trump's announcement that he wants to return the US to its original greatness in Space by "plant[ing] the Stars and Stripes on new worlds" (Smith, 2020, par 6-7). This shows that SpaceX has many similarities to European colonialism, especially with the East India company. The latter's mandate was to "govern vast territories" (Byers, 2016, par. 6; Britannica, 2019) and it operated in the name of the British Crown.

These differences in perception and possible future conception have troubling implications for the possible lived experience of outer space. SpaceX's projects, Mars&Beyond and Starlink, have many similarities with the colonial activities by the Hudson Bay Company in Canada. The company also represented British imperialism and, in 1670, King Charles II of England granted it "exclusive trading monopoly [and] the right to exploit mineral resources" at Rupert's Land – today known as the territories of "Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and the Northwest Territories" (HBC, 2016, par. 1; Smith, 2019, par. 1). In the case of the colonial practices by the East India company and the Hudson Bay company, territories were conceived as colonies meant for exploitation and distribution of resources among European settler-colonials, and shipment back to Europe. This created a lived reality of the colony in which the "Indigenous" (HBC, 2016, par. 3) peoples were subject to slavery and exploitation for labor.

The difference between occupation and colonialism by companies in the 17th and 18th Century, and that of SpaceX in the 21st Century is that, in the case of the occupation of Mars, it remains unclear whether there is life on the red planet. As of July 30th, NASA sent a robot called Perseverance to Mars to search for any life forms (NASA, 2020). That being said, the ethical questions that would be brought up by UNOOSA and other States in the case of occupation of a space where life was present differ to those that are asked

in the case of Mars. Another question that would arise would be in regard to labour when it comes to the construction of cities and societies. Who would do the labour designated to transform the harsh living conditions on Mars into a hospitable environment for humans? In summary, SpaceX falls more closely to Lefebvre's (1991) concept of space as closely interlinked to means of production.

SpaceX works under the supervision of the US government and it is supposed to offer a way for US astronauts, and soon civilians, a way to get to the 'red planet.' It is unclear who will be about to afforded this opportunity - whether it will be available to whomever volunteers, or only to US citizens. Will access to this opportunity rest on socio-economic backgrounds, or on a randomized method? This decision will have important implications for future expressions of gender, race, and class inequalities.

Contrasting this conception of outer space and celestial bodies, is the narrative constructed by UNOOSA, in the 1966 Outer Space Treaty. In this document UNOOSA clearly states that outer space and celestial bodies must be used for the benefit of all countries, regardless of their level of development. The non-governmental organization emphasizes the importance of sharing these resources because one of the core values of UNOOSA is international cooperation. The latter would not be possible to achieve if States were to compete against one another and try to impede others to thrive and advance scientifically and technologically. However, this is the current situation. As of 2020, there are a minimum of eight private companies in the US alone that are all competing against one another on who will create the optimal rockets and satellites. Additionally, these companies have also to compete with many other international corporations creating animosities and, consequently, unbalancing international cooperation.

As my analysis shows, SpaceX and the United States aim at keeping control over Mars' territory and, though the Mars project is to create a new hospitable environment for everyone to use in case living on Earth will not be feasible, the United States and SpaceX would still remain the main owners of the red planet. Meaning that they can decide who can have access to the resources and who will be excluded from such benefit. Contrary to this, the United Nations argue for no privatization of Mars and for its free use, without discriminations.

The implications to a disruption to international cooperation are “disorder, chaos, fear, uncertainty, insecurity, injustice, and dominance of the stronger” (UNOOSA, 2006, p. 99). This statement was written by UNOOSA in a publication that discussed the benefits of signing treaties for international cooperation. Similarly to the inferences I discussed in relation to SpaceX’s narrative on the use of outer space and celestial bodies, UNOOSA (2006) argues that if Space activities are not well monitored and restricted, outer space and celestial bodies would be ruled through arbitrary guidelines. This could lead to a non-democratic use of the resources and to their exploitation. Additionally, UNOOSA argues that regulations through the International Rule of Law – at the base of international cooperation – is that it deters from the rise of possible conflicts that could lead to destructive consequences. A disruption of international cooperation would, hence, repristinate socio-economic and political inequalities, both nationally and internationally. That is because those states that cannot afford high-level scientific research and developments of technologies will have to be dependent on more powerful states. Inequalities within a state will flourish due to a division between those who will be enabled to use the new technologies to reach Mars, and those who will be left behind. The reasons could be linked to class, gender, and race inequalities.

Chapter 7.

Conclusion

In this research thesis, I argued that the private corporation, SpaceX, is directly challenging the guidelines set by the United Nations Office of Outer Space Affairs' 1966 Outer Space Treaty by creating a conception of outer space and celestial bodies that is similar to that of colonies during the conquest of the 'New World'. Hence, it creates a perception that outer space and celestial bodies are resources available for private use. This directly contradicts UNOOSA's statement that "[Outer Space and celestial bodies] shall be province of all mankind" (UNOOSA, 2008, p. 4, Article I).

SpaceX is able to challenge the Treaty's guidelines by depicting itself as fundamental to human advancement, thanks to its superiority in technology and scientific achievements. Another important detail that allows SpaceX to continue its Mars&Beyond project, and that further connects it to colonial activities by European corporations in the 17th and 18th century, is the rejection by the current president of the United States, Donald J. Trump, of UNOOSA's declaration of Outer Space and celestial bodies as "global commons" (White House, 2020, par. 4). It is, therefore, important to highlight the danger of privatization of Outer Space and celestial bodies, as it could lead to the disruption of international cooperation and to a potential escalation of conflict among rising world powers – such as India and China. As in the case of 20th century Space Race, which was driven by a competition between the US and USSR on who would be the first one to successfully land on the Moon, SpaceX and the US have created a similar atmosphere of competition in the 21st century. As of 2020 there are many international companies racing against one another, some examples being: Virgin Galactic (UK), Roscomos (Russia), Zero2Infinity (Spain), India Space research Organization (ISRO), SpaceX (US),and China Aerospace Science and Technology Corp (CASC). In addition to this, there are many US based company that are also racing against one another, some examples are Blue Origin, Orion Span, Boeing, and SpaceX.

This competition could not only result in the disruption of the International Rule of Law, but it could also have significant implications for how outer space and celestial bodies

are conceived, and what that means for how they will construct the lived experience of class, race, and gender relations in the future.

As discussed in the content analysis section, UNOOSA treaties and agreements, including the 1966 Outer Space Treaty, can only effective if they are signed and ratified by states. Additionally, because the application of the guidelines is based on soft law, meaning is not “directly enforceable” (USLegal, 2019). Unless states report illegal activity by another state, UNOOSA can only request the state to submit any findings to the organization and to all party state to the treaty. An example of an agreement that has not been ratified nor signed by many states, US and Russia included, is the 1979 Moon Agreement. This means that any updated restrictions from the 1966 Outer Space Treaty cannot be reinforced on states that do not recognize the agreement, giving the latter more leeway in the actualization of their projects.

Because of this flexibility, the US is able to give SpaceX freedom of action, as long as the company will lead the US to the occupation of Mars and to “making history” (SpaceX, Elon Musk, 2020, par. 1). This argument that a US company, SpaceX, has colonial ideals was further developed in the discursive analysis and narrative analysis of the corporation’s website, and of its CEO’s tweets and interviews. Here I showed how Elon Musk and the company have created a narrative in which the privatization of Mars is justified as its success will give hope for a brighter future for everyone. However, this means that the US’s company will be able to decide who will have access to the technology to go to Mars and who will not. Although, SpaceX seems to be in the leading position for achieving the Mars&Beyond project, many companies are also creating their own technologies and projects so that they too can go to Mars. The resulting competition among states and their corporations is resulting in the deterioration of international cooperation.

It is thus important for UNOOSA to create policies that take a proactive stance towards the roles of private corporations in the future of international cooperation. This means creating benefits for those states that keep their corporations accountable for any deviation from UNOOSA guidelines, as well as increase pressure for states to sign and ratify new agreements on the peaceful use of Outer Space and celestial bodies.

As of October 2, 2019, UNOOSA has partnered with Italian, Zambian, and US companies – SpaceX was not one of them – to “make space more accessible” (Gohd, 2019, par. 1). They are planning on creating opportunities open to all UN member States, though the projects are particularly intended for developing countries, to offer space-based research. That is all member states can experiment for free on a satellite (Gohd, 2019). This initiative will also adhere to the guidelines on reducing Space debris and climate change. As discussed on Space.com “UNOOSA aims to increase space access in ways that Di Pippo describes as "responsible," meaning they will adhere to guidelines regarding issues such as "space junk" and climate change” (Gohd, 2019, par. 10). By partnering with private corporations from different countries and creating more benefits for its member states, UNOOSA is trying to reduce the number of single corporations competing against one another and internationally. This effort, however, will not stop SpaceX, for instance, because the company does not need those benefits created by UNOOSA. SpaceX can easily find other sponsors for its projects.

Having said that, Victor Shammas and Tomas Holen (2019) argue that, although SpaceX declares itself as an independent company, it is actually “deeply embedded in in the state” and highly “dependent on tax-payer money to stay afloat”(as cited in Nelson and Block, 2018, p. 189). Therefore, for capitalistic value on the use of Mars and outer space may be altered depending on whether the “state [can] create a regulatory environment, subsidize infrastructure, and hand down contracts – in short, assemble outer space as a domain made accessible in legal, technical, and economic ways” (Shammas and Holen, 2019, p. 6).

A professor from the University of Caen, Philippe Achilleas, has argued that “international law must establish the balance between respect for the main principles of space law and the need to support private initiatives” (2016, slide 16). In other words, UNOOSA should foster a cooperative relationship with private corporations rather than only with states. This proposition, however, may still be not enough as the corporations may not be getting enough benefits from such partnership. Future research could focus on possible proactive policies that UNOOSA could adopt to both restore international cooperation and to decrease Space pollution. Another area of study for future research could be the ethics behind a possible discovery of life on Mars, and how would that alter SpaceX’s mission to go to Mars.

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