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## The Role of Space in Cooperation and Competition between Great Powers

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### Abstract

Space has increasingly shaped the discourse of international relations in the 21st century. Space has always been an attractive area for cooperation and competition between governments and especially great powers. Space is a relatively new and developing scene in the international system. The launch of Sputnik not only created the space race, but also accelerated the arms race and intensified the Cold War between the two rival superpowers. During the Cold War, the United States and the Soviet Union dominated space activities. At the same time as the competition that has formed in space, there are sometimes collaborations, the International Space Station is one of the projects that brings together space countries and is seen as a symbol of cooperation between governments in space. However, there is still a sense of competition for supremacy in space even in the presence of such cooperation among all governments, whether those who are superior in terms of space technology or those who have less technological ability. The main question in this article is what role does space play in cooperation and competition between great powers? The hypothesis is that the great powers were always competing and seeking superiority in space from the beginning, and based on the theory of neo-realism, they cooperate with each other in space only to secure their interests and protect their space assets.

**Key words:** Space, Great Powers, Competition, Cooperation, Neo-realism

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## Introduction

From the first day when mankind reached outer space, it became a central issue for international politics. The space race began with the launch of Sputnik 1 by the Soviet Union. As one of the world's superpowers, the United States could no longer underestimate the capabilities of the Soviet Union. The launch of Sputnik not only created the space race but also accelerated the arms race. This age is the age of space. In the second half of the 20th century, humanity began to exploit the potential of space for the first time, and in fact, it defined our age for decades and centuries to come (Groen and Hampden-Turner 2005: xvii).

Currently, thousands of satellites from different countries are in orbit and they image the Earth, they are very effective in communication, navigation, and providing various scientific information. The space military power of some countries such as the United States depends on it. While there is competition in space, sometimes there is cooperation, the International Space Station is one of the projects that brings together countries with space capabilities and is seen as a symbol of government cooperation in space. Each of these governments, with different cultures, ideologies, and international relations, provides the manpower and resources needed for this space station.

However, there is still a sense of competition for supremacy in space even in such cooperation among all governments, whether those who are superior in terms of space technology or those who have less technological ability. The main contributors to the space station program are Russia and the United States, which have spent the most and provided the launch facilities. Despite the historical relations and

constant rivalry between the two superpowers, this program needed the support of both countries. These two countries have helped each other, however insignificant, in the field of space exploration. Almost all the nations that had space capabilities have a share in this program. Cooperation and competition between governments, especially today in the field of space, have a significant impact on the security of countries. In general, with the advancement of space technologies, the security concerns of countries increase, and this increases the competition between countries in this field and space control.

Cooperation in one field between governments in space can lead to cooperation in other fields among them. If the competitors cooperate with each other, the relations between them will improve and the trust between them will increase, as a result, the competitors will not deploy more weapons to increase their space military power due to a sense of insecurity. One of the projects that was formed for this reason was Apollo-Soyuz. A program in which Russian and American astronauts connected their spaceships and met each other in orbit. This mission became a symbol of the era of de-escalation between the two superpowers. In general, when competitors trust each other, tensions and the possibility of conflict between them will decrease.

Space is a relatively new and developing scene in the international system. Of course, over time and the advancement of technology in this field, the role of space in the international system will become more important. One of the most important aspects of space is the increasing role of space assets in ground conflicts. Satellites are able to transmit intelligent, communication, identification and navigation information to the land, air and sea forces of countries. Obviously, governments are trying

to protect their space assets while finding a way to weaken their rivals and enemies in this field. In addition, only a limited number of countries have access to space, although space is the common heritage of humanity, but each country can access it only according to its capabilities. In fact, the space policy is formed by the space powers, countries that are mainly global or regional powers.

Although since the first satellite was launched, the two space superpowers, the United States and the Soviet Union, realized that they had to agree on certain rules, but even these rules do not seem to apply equally to all countries to this day. At the time, the Soviet Union wanted the United Nations to oversee the peaceful use of space as a neutral third party, and the United States agreed. In December 1958, a year after the launch of Sputnik, the United Nations established CUPUOS (United Nations Committee on the Peaceful Uses of Outer Space). After many political problems, in 1721 CUPUOS proposed a resolution to apply international laws to space and all other celestial bodies for their peaceful use and exploration. This was the first space law document. Other treaties were also formed in the future, which contain laws related to the use of space and its exploration. The first treaty is the Outer Space Treaty. This treaty is considered a significant development in international space law. Finally, the main problem for cooperation in space between competitors is the national policy of countries, which is more inclined to self-help than to help each other and achieve collective security. The main question in this article is what role does space play in cooperation and competition between great powers? The hypothesis is that the great powers were always competing and seeking superiority in space from the beginning. Based on the theory of neo-realism, they cooperate in

space only to secure their interests and protect their space assets.

## Theoretical Framework

### Neo-realism

With the publication of Waltz's Theory of International Politics in 1979, the tradition of realism was revived. Waltz argues that systems are composed of structures and units interacting with each other. Political structures have three elements: the ordering principle (anarchic or hierarchical), the nature of units (with similar or different functions), and the distribution of capabilities (Waltz 1979: pp. 88–99). Waltz believes that two elements of the structure of the international system are constant: the absence of a central power means that the ordering principle is anarchy, and the principle of self-help means that all units act equally. Accordingly, the only structural variable is the distribution of abilities, and in this sense, there is a difference between bipolar and multipolar systems.

According to Waltz, anarchy prevents governments from entering into cooperative agreements to end the state of war. A state of anarchy refers to the fact that there is no superior power to maintain peace between sovereign states and is often equated to a state of war. By using the word state of war, realists do not seek to imply that war is all-encompassing and a daily occurrence in international politics; The possibility that a particular government may resort to force further indicates that war is a likely event in an anarchic environment. Therefore, the structure of this system can lead countries to war even if the statesmen of the countries seek peace (Waltz 1990: p. 34).

Waltz's theory removes the motivations of leaders and the characteristics of the state from among the variables that are considered the

cause of international outcomes and only takes into account the assumption that states seek to survive (Griffiths 2007: p. 13). According to Waltz's theory, government behavior can be a product of competition between governments, either because they calculate to act in a way that brings them the greatest benefit or because if they do not, they will be left out of the system. In this way, state behavior can be a product of socialization: states can decide to follow norms because they calculate the norms to their advantage or because the norms are internalized. He suggests that systematic processes will always produce international consequences of alignment. Waltz's goal is to explain why similar structures of international systems all lead to similar outcomes even if their units (member states) have different domestic political arrangements and specific local histories. Waltz concludes that there must be something special and inclusive about international relations that leads to these similarities (Griffiths 2007: p. 14).

Jervis believes: when we are dealing with a system where a set of units or elements are so interconnected that a change in some elements or their relationships causes a change in other parts of the system; And the whole system exhibits characteristics and behaviors that are different from the characteristics and behaviors of its components (Jervis 1998: p. 7). The results are not only influenced by the behavior of individual governments, but there is a tendency towards unwanted and strange results. As a result, there is a gap between what governments want and what they get (Spiras 1996: pp. 387-400). The results Waltz predicts about the international system include: multipolar systems are more unstable than bipolar systems; Interdependence in bipolar system is less than multipolar system; And regardless of the behavior of governments, it is unlikely or even impossible for a single government to achieve superiority.

Neorealists believe that when international politics is understood as a distinct system or structure, this situation is considered the starting point for theorizing international relations and the point of departure from classical realism. Neo-realists believe that international politics consists of a system with a defined structure and different international systems are distinguished in terms of the number of great powers and the different distribution of power among them; In other words, this distinction is made through different international structures, during which legitimate international power structures create different types of international behaviors. While classical realists look for the root of power in human nature, neorealists point to the lack of central authority in the international system, during which the accumulation of power forces states to survive (Qawam 2014: pp. 87-84).

In the framework of neorealism, the efforts of governments are divided into two categories: internal efforts aimed at increasing economic and military capabilities and developing a smart strategy, and external efforts that lead to strengthening internal alliances or weakening the alliances of the opposite party. In general, abilities show the position of governments in the system, and the distribution of abilities may define the structure of the system. Neorealism emphasizes relative benefits; in this process governments try to evaluate what they are getting compared to their competitors. Also, in addition to paying attention to conflict and antagonism, neo-realists also pay attention to cooperation, cooperation to the extent that it provides the interests of governments (Qawam 1384: pp. 88-90).

### Cooperation in space

The decision to withdraw from the space conflict was not made immediately or easily. the

loss of seven satellites due to electromagnetic pulses from space station nuclear tests in 1962; And mutual concerns about radiation threats to astronauts and the dangers of nuclear war highlighted by the Cuban Missile Crisis forced both sides to impose military restrictions on space against their will. The superpowers did not reduce their military goals in space, but focused their energies on less risky goals, such as human spaceflight, a military support program for reconnaissance, communications, and early warning of missile launches. Accordingly, in 1963, they created a kind of shelter. Britain, the Soviet Union, and the United States signed the Partial Nuclear Test Ban Treaty, which prohibited further nuclear tests in orbit, at sea, and in the atmosphere. They also tried to get the United Nations to pass a resolution in 1963 prohibiting countries from putting weapons of mass destruction into orbit and to adopt a law of international responsibility in outer space. Also, the moon and other heavenly bodies do not belong to any country and are the common heritage of humanity. This resolution called on all countries to help astronauts who get into trouble in space, as well as astronauts who land outside their countries (Sheehan 2007: pp. 46-48).

### **Space cooperation of great powers**

In commercial space, countries agreed in 1963 to grant the International Telecommunication Union the right to allocate radio frequency spectrum for satellite transmission. The

International Telecommunication Union also took responsibility for distributing a limited number of slots above the equator in Earth's orbit, an ideal location for satellite broadcasts and communications concentrated in a particular region. Despite the new international agreements, the intense political competition for the international leadership of space encouraged both sides to develop national space technology and pay heavy costs in this field. From launching Sputnik to sending Gagarin and Tereshkova into space, the Soviets always had space firsts in the early years of the space age. Ironically, arms control reduced the risk of military conflict and made civilian competition safer (Siddiqi 2013:332).

After the assassination of John F. Kennedy in November 1963, his successor, Lyndon Johnson, strongly supported NASA's activities and pressured Congress to provide funding for these activities. This commitment continued the development of space activities (Herz 2014: p. 152). Weaker Soviet economic resources and the unexpected death of Sergei Korolev, chief designer of space activities, in January 1966 significantly weakened Moscow's efforts in its lunar space program. The original Soviet investment in the N-1 missile was also a fatal mistake (Siddiqi 2013: p. 548). Despite this competition (Table 4.1), the trend towards creating a stronger foundation for the peaceful management of space increased.

Table 4.1: Firsts in US and Soviet space activities during the Cold War

Activity	Country	Date	Spaceship
terrestrial satellite	Soviet Union	October 1957	Sputnik 1
Sending an animal into orbit	Soviet Union	November 1957	Sputnik 2 (Leica)
Spacecraft landing on the moon	Soviet Union	September 1959	Luna 2
Weather satellite	United States of America	April 1960	Tyros 1
Navigation satellite	United States of America	April 1960	Transit 1 b
Electronic information satellite	United States of America	June 1960	Garb
Identification and imaging satellite	United States of America	August 1960	Corona/Discoverer 14
Communication satellite	United States of America	October 1960	Courier 1 b
Sending humans into orbit	Soviet Union	April 1961	Vostok 1 (Yuri Gagarin)
Sending a woman into orbit	Soviet Union	June 1963	Vostok 6 (Valentina Tereshkova)
Nuclear detection sensor	United States of America	October 1963	Villa Hotel
space walk	Soviet Union	March 1965	Voskhod 2 (Alexei Leonov)
Man landing on the moon	United States of America	July 1969	Apollo 2 (Neil Armstrong)
landing on Venus	Soviet Union	December 1970	Venus 7
space station	Soviet Union	April 1971	Salute 1
Landing on Mars	United States of America	July 1976	Viking 1
Reusable space shuttle	Soviet Union	April 1981	Columbia
Man staying in space for one year	Soviet Union	December 1988	Mir (Vladimir Titov)

In 1966, the United States submitted a draft Outer Space Treaty to the United Nations Space Committee, which was very similar to the 1963 UN resolutions. The United Nations unanimously adopted the Outer Space Treaty in late 1966 and opened it for signature by nations in early 1967. The main elements of this international agreement include:

- Space discoveries should be made for the benefit of all countries and space is the common heritage of humanity. (first article)

- Outer space, atmosphere and celestial bodies are not under the sovereignty of any country. (second article)



- Testing weapons or conducting military operations on celestial bodies, especially the moon, are prohibited. (Article IV)

- Countries that intend to carry out activities in space and celestial bodies must be careful so that they do not harm or cause pollution. And they should inform the rest of the countries before doing any activity so as not to cause harmful interference in the activities of others. (Article 9)

- All space stations located on the moon or other celestial bodies must receive the representatives of all the other countries based on reciprocity (Article 12) (Outer Space Treaty).

During the test of the new Apollo 1 capsule, in Florida, three astronauts suffocated as they tried to escape the fire. They could not unbuckle their seat belts and were stuck in their seats. A few months later, the first Soviet Soyuz capsule to survive a dangerous orbital mission was destroyed by an equipment malfunction, and when it was relaunched, it failed to deploy its parachute properly during landing. The high-velocity capsule's violent collision with Earth killed cosmonaut Vladimir Komarov, prompting a halt to the Soviet manned space program (Siddiqi 2013: p.671). These terrible events led to the signing of the Astronaut Rescue Agreement; the return of astronauts and objects launched into outer space in 1968. Based on this, both sides helped the astronauts who landed somewhere other than their homeland or had a problem and returned them to their countries. They could not unbuckle their seat belts and were stuck in their seats. A few months later, the first Soviet Soyuz capsule to survive a dangerous orbital mission was destroyed by an equipment malfunction, and when it was relaunched, it failed

to deploy its parachute properly during landing. The high-velocity capsule's violent collision with Earth killed cosmonaut Vladimir Komarov, prompting a halt to the Soviet manned space program (Siddiqi 2013: p.671). These terrible events led to the signing of the Astronaut Rescue Agreement, the return of astronauts and objects launched into outer space in 1968. Based on this, both sides helped the astronauts who landed somewhere other than their homeland or had a problem and returned them to their countries. Also, help the astronauts in case of a problem both in space and on their return to earth. But there was no mechanism to stop the spacecraft in the spacecraft construction programs, so this treaty should wait until the political and technical relations of the two countries become closer (Burrows 2010: p. 64).

United States In 1968, the unmanned Apollo 6 capsule suffered a pogo impact. NASA's amazing engineers watched as their tall rocket, which was about the size of a thirty-six-story building, underwent yo-yo oscillations for almost half a minute until it finally took off (Burrows 2010: p.89). After that, the manned flight of Apollo 7 completed its mission successfully. The next three Apollo flights were successful until Apollo 11 successfully landed on the moon on July 20, 1969. A desperate Soviet attempt to land an unmanned rover on the moon ended in an explosion on the night of the Apollo 11 mission when the spacecraft took off. After this terrible failure, which caused a lot of damage to the Soviet Union, this country stopped trying for a manned mission to the moon and focused its attention on space stations, long-term human stay in space, and space military programs (Siddiqi 2013: p. 682).

### **Cooperation of other space countries**

In Asia, Japan's economic recovery in the 1950s and 1960s sparked interest in the development of space capabilities for scientific and economic purposes in this country. In order to prevent entering into any military programs in space, the constitution of this country passed a resolution in 1969 that explicitly prohibited this country from interfering in military programs. In January 1970, Japan became the fourth country to launch a satellite into space. Japanese scientists and engineers began to work closely with the United States to learn liquid rocket technology from them and to develop a more powerful launch system for the next generation (Pekkanen and Callender-Umezu 2010: p. 32).

China took a conventional military path to space. After the communist revolution in 1949, the young Chinese government received significant technological assistance from the Soviet Union, including prototypes of two early Soviet missiles (the R1 and R2 missiles) in the late 1950s. Finally, in April 1970, China became the fifth country to send its satellite into orbit. England also joined the space nations in October 1971 and launched the Prospero satellite into orbit in Australia with a Black Arrow rocket. But it canceled other launches due to cost and access to US launchers (Moltz 2011: p.46).

### **Cooperation between the two superpowers after the collapse of the Soviet Union**

After the collapse of the Soviet Union in 1991, budgetary pressures in both Russia and the United States led to a deepening cooperative relationship between them. The United States,

seeking to recover from Reagan-era budget deficits, found plans for major space initiatives such as the space station unaffordable despite cooperation with several allies. Ultimately, the mutual interest led to an unprecedented agreement between Clinton and Yeltsin for Russia to join the International Space Station program. NASA provided funding for astronauts to visit the Soviet Mir space station while also acquiring Russian technology to develop new options for the commercial and military needs of its military launches (Mutschler & Venet 2012: p.78).

Although US-Russian civilian space cooperation expanded in the 1990s, space arms control activities lost importance. In this new international environment, the United States had no real competitors. Low demand for new space security agreements in the Clinton administration, combined with Senate Republicans' renewed opposition to any new space-base treaty (concerns that it would limit US missile defense options), had silenced the country's space diplomacy. After the Bush administration took office in 2001, it removed a cornerstone of space security, announcing it would withdraw from the 1972 Anti-Ballistic Missile Treaty to make way for a nationwide missile defense. This action opened the way for the possible deployment of space-based weapons. Protests by the new Russian president, Vladimir Putin, as well as a coalition of US allies, failed to stop this change (Sheehan 2007: p.61).

Between 1979 and 1998, the United States and China cooperated in civilian and commercial space activities. The initial motivation of this cooperation was due to the common mistrust of the two countries towards the Soviet Union. Two Chinese rocket flights on a US shuttle



mission in the early 1990s opened the market for US commercial satellite flights on Chinese rockets. But a change in congressional export control guidelines in 1999 halted this cooperation, as it classified all US space technology as munitions (Johnson-Freese 2007: p.143).

At first, the strict export control had the desired effect of curbing the possible exit of military secrets to China and punishing the establishment of the commercial sector of this country. However, other countries have stepped into this arena without these restrictions, and have started commercial space cooperation with China. While imposing strict export controls, the US Congress neglected the widespread availability of satellites and other space-related technologies on the international market. Russia, Ukraine, Germany, France, Italy and the UK all benefited from the new US regulations, and many US allies stopped using US technology in their spacecraft to avoid US restrictions and promote their export industries. As a result, civilian and commercial ties between these countries and China have strengthened, while US space cooperation with Beijing has been significantly reduced. Space cooperation was always formed based on the interests of countries at a particular time (Moltz 2011: p. 54).

### **Space competition**

The early space programs of the superpowers clearly drive competition between them. National security was defined as the military security of the armed forces of the opposing superpowers, which had become the undisputed priority of the leaders of both countries. The relationship between the United States and the Soviet Union is seen in both countries as

competitive at best and belligerent at worst. The driving force behind both programs was the acquisition of military capability, missiles capable of carrying nuclear weapons and satellites capable of safely conducting reconnaissance missions in enemy territory. Military and civilian programs were related to such an extent that the former diverted attention from the latter, such as the American search satellite, which was deliberately used as a cover for military activity (Sheyhan, 2018: p. 13).

The drive into space was largely the result of the terrestrial superpowers' competition for planetary hegemony, and their respective space capabilities grew out of the strategic nuclear arms race. However, as a scene of political interaction, the space environment reacted to changes in the world system and this was reflected in the emergence of Europe, China, India and other countries as actors in this play. Again, realism, as the 1960s paved the way for the 1970s, had no problem explaining the play in terms of the gradual evolution of the relatively rigid post-World War II bipolar international system into a more complex multipolar one (Goldsen 1963: p.4).

### **The competition of space powers from the beginning of the space age until now**

The vacuum of space did not remain a vacuum politically, once again the Soviet Union posed an ideological challenge, demonstrated by the launch of Sputnik in 1957. In contrast, the launch of Sputnik became a symbolic example of the same power politics that defined and described the relations between the powers on Earth. In addition, the movement towards space brought a new criterion for recognizing the promotion of power and the allocation of

credit in the world community (Knorr 1963: p. 117). Considerations of power and prestige were at the center of the space programs of the early superpowers and remained the main motivations of actors (Sheyhan, 2018: p. 17).

In the early 20th century, space developed and was no longer simply seen as an environment in which the use of force on Earth could be supported; Or the area where the war will take place, because each side is looking for military use of space and denies using it against the enemy. The inevitable logic of such developments is on the one hand with the neo-realist approach to international relations (Sheyhan 2018: p. 20).

Neorealism can be recognized through convergence in goals that occurred during the same period. In the mid-1980s, the various space programs had obvious similarities but also important differences. A key feature of the neorealist interpretation of international relations is the argument that the security conundrum compels states to behave similarly if they are to survive and succeed. The limitations of the system stimulate the governments to become the same in terms of performance in the field of security. There is evidence to support this claim in the evolution of several space programs over the past three decades. For example, the programs of Japan and the European Space Agency originally had no military dimension, while the space programs of China and India lacked the presence of a man in space, and this lack was not a significant weakness in any of the national and international programs. However, in the past two decades, various programs have become increasingly similar in content and goals (Sheyhan 2018: p. 23).

Currently, Europe and Japan have added a military dimension to their programs, while China has achieved a manned space program and India has announced plans to do so. It seems that these programs appeared to validate the neo-realist argument that the capabilities of states in the international system are different, but they are similar in their goals and the process of achieving them (Mearsheimer 2007: p. 72).

Having a leading position in technology, space achievements can be presented and interpreted as a symbol of human progress and the special prestige of the social and economic system. Morgenthau pointed out the importance of prestige and defined it as "fame for power", which could be a means to achieve larger political goals. When countries can pursue policies designed to enhance their prestige and credibility, they seek to confirm their assessment of power, success, and even superiority. According to Karl Deutsch, "Power brings prestige as money brings credit" (Brooks 1983:193).

Prestige acquisition maintains and enhances a reputation for power and can significantly contribute to a state's power in world politics. The beginning of the space competition of the superpowers is a striking practical example in this field, with the game of two countries that saw their international authority influenced by domestic and especially foreign perceptions of their relative performance in space. Soviet space policy, from the very beginning, was not only looking for plans for military and scientific exploitation of space, but also for political interests. The space program was so impressive and interesting that it served the Soviet Union's propaganda goals with unusual effect. Kalevi Jaakko Holsti had pointed out that the

interests of the Soviet Union could be promoted through propaganda programs. In this way, foreign governments can be sidelined and the people of the countries of the world can be influenced instead. It can be hoped that this population, in turn, will force its government to behave in a manner consistent with Soviet interests (Holsti 1988: p. 207). The space program showed clear evidence of modern scientific, technical and industrial bases in the Soviet Union.

From a neorealist perspective, the pursuit of power encouraged the Soviet Union and the United States to pursue increased achievements in space exploration in hopes of increasing their military, technical, and prestige capabilities. Both sides were increasingly aware of the inherent dangers of nuclear confrontation, as well as the fact that full-scale nuclear war would involve mutual annihilation. Therefore, while still seeking superiority over their competitors, they looked for other options to demonstrate their claim to superiority over each other. Space competition became an important substitute for war. A very important development in this regard was the doctrinal change that took place at the Twentieth Congress of the Communist Party of the Soviet Union, where the Communist Party of the Soviet Union emphasized the idea that full-scale war with the West was not inevitable (Mackintosh 1962: p. 274).

Kenneth Waltz created a systematic theory in international relations by creating the perspective of neorealism, which originates from the behavior of the units of the system (states). The distinctive feature of this structure is anarchy. The anarchic structure creates a self-help system in which each country is responsible for its own security because there is no

central authority to guarantee the security of the countries. States are seen as unitary actors that differ according to their capabilities, which are usually measured by military and economic indicators. All governments in this structure have one main goal and that is survival, which in an anarchic environment means that governments have to maximize their security. The power and position of governments are very important in this field. From the point of view of neorealism, governments are very sensitive to power and carefully evaluate the consequences of their actions for their position of power (Mustchler 2012: pp. 48-49).

According to the neo-realist perspective, the unequal distribution of advantages is the main obstacle for international cooperation. In an anarchy-ridden international system, states cannot bear their relative disadvantage compared to their rivals (Waltz 1979: p. 459). This is especially true of arms control agreements that seek to ban or limit any type of weapon. If there are different levels of technological development with respect to arms technology, states that are less capable will naturally benefit more from arms control agreements than states that are more proficient in this area. This also applies to space weapons technology.

It is clearly stated that the United States is more advanced in space technology than other countries. Other countries have also made progress in this field, but they are not yet as specialized in space technologies as the United States. Considering this issue, countries like Russia and China benefit more from treaties such as "preventing the deployment of weapons in outer space". Such a treaty would prohibit the deployment of advanced space-based weapons but allow the deployment of ground-

based anti-satellite weapons. It is reasonable for a country like the United States to oppose such a treaty (Hays 2010: p. 97).

While both superpowers tested anti-satellite weapons. They refused to fully develop and deploy such weapons. Neorealism argues that this is the result of an asymmetric power balance between the United States and the Soviet Union. It could also be a great explanation for the renewed efforts of the United States to develop space weapons technology after the Cold War, when the power of the United States was no longer checked by its rival. In the 1970s, the United States was at the forefront of space technology. One might argue that a space weapons ban should be created that applies to both simple weapons such as ground-based anti-satellite weapons and complex weapons such as space-based lasers, a treaty that provides balanced benefits for security cooperation in space. Such an agreement ensures the security of all countries in space. Both the space powers and countries that have made less progress in this field face limitations in their choice of weapons. As the United States relies heavily on space systems for its military purposes such as navigation, it also benefits from maintaining space security (Mustchler 2012: pp. 48-49).

After the collapse of the Soviet Union in late 1991, the United States emerged as a powerful hegemon in space. The end of hostilities led both powers to cooperate to build an International Space Station, which brought their conflict to a standstill. The current era of international relations began in 2003 with China's first manned space flight. Beijing's emergence as a military space power poses a potential challenge to the United States and ushers in a new space era with several notable space

actors with much broader capabilities than before. (Johnson-Freese 2007: p. 39-51).

In January 1957, the United States proposed that any development in the outer atmosphere should be exclusively for peaceful and scientific purposes, and that any testing of space systems should be subject to international inspection and cooperation. However, the Soviet Union had no goal for its missile program to deceive the West. Immediately after the launch of Sputnik by the Soviets, the United States ambassador to the United Nations, who was aware of the Soviet military goals in its space activities, proposed the formation of an international organization; to monitor satellites and limit space activities to civilian purposes (Dockrill 1996: p. 15).

There was no arms control treaty between the two superpowers, and given the hostile political relations between Moscow and Washington, no agreement was expected. The Eisenhower administration's decision in late 1958 to create an entirely civilian space agency, NASA, to compete with the Soviet military space program was the first divergence in approach. This action not only did not lead to cooperation, but the Soviet Union started a fiercer competition with the United States. Space became a symbol of the struggle between communism and democratic capitalism, which made cooperation very unlikely (Morgan 2010: p. 28).

The launch of Yuri Gagarin into space in the spring of 1961 created a deep crisis of confidence in the United States. But US President Kennedy was encouraged by his advisor Lyndon Johnson to take a bold and risky decision and committed to making the United States the first country to send an astronaut to

the moon before the end of the 1960s. Surprisingly, Congress approved and funded his proposed program (Logsdon 2010).

Behind the scenes, the US and Soviet militaries were competing with each other to develop a space defense system: nuclear anti-ballistic missile systems for use in space, kinetic anti-satellite weapons, intelligence gathering satellites, and even plans for a military space station. For several years, the United States concealed the operational development of its military activities from the Soviet Union. Most of these activities, such as the Navy's spacecraft, the Air Force's Corona satellites, remained classified and were presented to the public under false names. The Greb spacecraft was developed by the Naval Research Laboratory and in the 1960s it collected data from Soviet air defense radars, information about Soviet military programs and some of the country's most critical locations to target in the event of a war. Flights also took place under the Discovery Science Program, a US effort to conduct medical and biological experiments to find a way for human spaceflight. Similarly, the Soviets also conducted their secret military experiments under the generic Cosmas Rubric program, which covered everything from scientific exploration to spy satellites (Berkowitz 2011: pp. 57-58).

The plans of landing on the moon by NASA astronauts and Soviet unmanned explorers and Mars rovers made other countries think that they might live on the moon permanently and exploit the untold wealth and mines there. As a result, the United Nations began negotiating a treaty to prevent conflict on the Moon and create a potential mechanism to manage access to the benefits of the Moon's resources. Finally, the Moon Treaty was approved in

1979, proposing the creation of an international organization that would be responsible for allocating resources and benefits so that all countries would benefit from the exploration of the Moon. He also asked the countries to pay a fair share of the desired benefits so that the needs and interests of the developing countries are also met. Not surprisingly, the space nations refused to support the new treaty (Wolter 2006: p.89).

### Conclusion:

The human movement towards space and the development of satellite technology have been one of the programs of all governments since the beginning of the space age. In the contemporary era, from the point of view of neorealism, space has also become another field of competition so that mankind can use its advanced and destructive weapons and put space under its control. A growing number of international space actors argue that the infrastructure of modern society, including communications, media, and environmental monitoring, relies heavily on satellite technologies. In fact, space is becoming more secure day by day, which means that access to space is now very important for the military, political and economic security of space countries and international organizations. Making space competitive creates serious challenges from an arms control perspective. If we look at space primarily from a competitive perspective, we face threats and countermeasures that are traditionally associated with security and military issues. In this case, the wider civilian applications of space are at risk. However, the space countries continue to develop their space technologies, satellites and space

weapons regardless of these threats. Space, since its arrival in the scene of international relations, also increased the desire of governments for military and weapons competitions. Outer space has become a new stage for the arms and military competition of countries without regard to the security of other countries.

In the current history of space policy, all countries active in space say that they act according to the Outer Space Treaty of 1976 and participate only in activities with peaceful purposes. But whether it is really like this and where international space relations are going are very complicated issues. Many national militaries see space activities as an important factor in strengthening their future capabilities, both in peacetime and wartime. The proliferation of new commercial actors in space, often transnational in ownership and funding, is said to complicate old patterns. Finally, the rapid growth of commercial human spaceflight in the next decade is likely to be a new issue for maintaining safe access to space, possibly limiting national militaries. These new and contradictory agendas will create new cooperation and competition with the emergence of new technologies. More fields will be created for competition between space countries.

In fact, according to the neorealist view, governments are reluctant to cooperate unless they have compelling reasons to do so, and this is due to the mutual insecurity they experience from the security enigma. International cooperation is likely to be limited, and where it experiences this limitation, it will become fragile and unstable relative to the importance of the issues around it. However, in space politics, governments have often looked for opportunities to cooperate, often consciously as

a way to reduce the risks inherent in adversarial relationships, such as those between the superpowers in the Cold War or the relationship between China and Russia.

Neorealism describes space as a challenge to power, and explains how developed countries view the ability to defend or destroy space assets as a national security concern and why developed countries seek to prevent developing countries' space advancement. Any space security cooperation must deliver a balanced outcome to have any chance of success. Interdependence in space provides a strong incentive for cooperation. In the meantime, governments prefer to maintain their unilateral actions in space. National goals and interests are a priority for space countries. Conflict and hostility in space are created due to insecurity. In fact, anarchy in space forces the big space powers to engage in aggressive behavior and competition in order to maximize their space power and space hegemony and ensure survival.

There will be a situation where the best security strategy of a country will be cooperation instead of competition. To seek a less dangerous world than a safe and peaceful world. In such a worldview, there is clearly a place for international cooperation, although it is not seen as overcoming the belligerent nature of international relations. Therefore, the spatial activity brought about a change in the appearance of the tangible measurement of power, but not in its fundamental principles. Due to the dominance of realism thinking in the early space age, there was more possibility of competition than cooperation and this political issue is always and still prevailing.



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