The Great Game of Space: Space Political Adventurism and Battle for Superpower Status Beyond the Horizons

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Abstract

Wars will not be fought on the grounds in the future, but explosions will occur beyond horizons. This research paper has extensively inscribed the subject of advanced strategies of the Great Powers, space militarization, and political adventurism of China, the USA, and Russia. The paper presents the political stratagem and space arms race of Russia, China, and the USA, which are combating each other for power status in orbits of space. As China and Russia challenge USA dominance in space, the USA seeks to weaponize space to maintain its supremacy and counter its rivals. The evolving international structure and world order are steering warfare into new dimensions, with space militarization posing nontraditional security threats. Despite international legal efforts and multilateral cooperation, major powers continue to expand their space arsenals, creating national security concerns. The study argues that international institutions have failed to curb the space arms race due to their ineffectiveness. Thus, there is a need for a shift in focus to find common ground and resolve this space security conflict. The paper provides a theoretical overview of the role of international institutions and state behavior in the international system. Using qualitative research techniques, the study conducts in-depth exploration through secondary data gathered from various articles, journals, reports, and other related sources. Descriptive and explanatory research approaches are employed to achieve the research objectives.

Keywords

Political Adventurism, Weaponization, Satellites, Arms Race, Surveillance, National security

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Introduction

The Great Game is a concept that has existed since the 19th and 20th centuries when major states emerged in the world diplomatic and political confrontation (Ingram, 1980). In the post-Empire era of the international world, powerful states started heading towards creating new world orders so that the political arena of the world could revolve around such states (Khanna,2008). Initially, the Great Game referred to the rivalry of Russia and Great Britain in their spheres of influence in Persia, Iran, Mughal India, and South-Central Asia. The great game is a game of influence and status of superiority in the international world (Smith, 2013).

Today, the concept of the Great Game has got into new dimensions. The security realm has also changed with the change in the international structure. In past eras, the notion of security was understood conventionally by focusing on traditional threats. However, technological advancement, changes in geopolitical strategies, and the rise of new international actors have enabled new threats to the world. The political adventurism of global powers in space is one of the new emerging threats that pose both traditional and non-traditional security issues through militarization, satellite interference, space debris, and surveillance.

During the Cold War, space witnessed intense militarization by the global superpowers, namely the USA and the USSR. By the 1960s, China emerged as a new challenger in space, leveraging its advancements in space technology and military capabilities. This period saw global powers competing to explore and utilize space for strategic interests, each vying to establish dominance in space. Space technology evolved significantly in the 20th century, serving various military and commercial purposes. However, as the 21st century unfolded, space gradually emerged as a critical domain of national security, driven by heightened political adventurism by states such as the USA, China, and Russia, extending beyond the confines of Earth's horizons (Wehtje, 2022). These central states are allocating significant resources to their space budgets. Today, warfare among great powers in this century does not necessarily commence with the sounds of explosions on the ground or in the sky, but rather, it can erupt in outer space (Abdoullaev, 2014).

With the assertive power projection and political adventurism of global powers in outer space, countries like the USA, China, Russia, India, and the commercial sector are conducting advanced technological and military activities in space. The USA was the first country to develop a significant interest in space exploration. The USA's Artemis program, announced in 2019, aims to return humans to the moon for the first time since 1972 (de Zwart, 2021). Over time, however, it has evolved into a race for hegemony to maintain the USA's status as a superpower (Stroikos, 2022).

The USA and Russia developed their space agencies to compete against each other in their space ambitions (Sheehan,2007). China's entry into space political adventurism and the space arms race have introduced new dimensions to international space security. Since the 1980s, the Chinese space agency has been working to challenge the long-standing duopoly of the USA and Russia in space (Juda, 2018). China's impressive Anti-Satellite (ASAT) program continues to advance, while the USA is expanding its counter-ASAT deterrence and developing next-generation space technology to meet these challenges (Walsh, 2007).

Although multilateral cooperation exists aimed at controlling the arms race in space, the primary agenda of the Russia-China alliance in space cooperation is their rivalry with the USA. This unity reflects a new power dynamic in bilateral agreements, with the aim of establishing an alliance against the USA (Easton, 2009).

India is emerging as a powerful player in space, particularly altering the dynamics with China. India is actively developing satellite navigation systems and surveillance capabilities to protect its interests, showcasing its proficiency in space missions. Its quest for regional hegemony and efforts to counter China further complicates the situation (Hussain & Shahzad, 2023). Although the European Union, NATO, and commercial sectors are also involved, the rivalry between the USA, Russia, and China continues to capture the most attention. Despite international institutions and treaties, the proliferation of space weapons has persisted into this century. Five treaties, including the significant Outer Space Treaty of 1967, were adopted to limit space weapons, but China, Russia, and the USA have neither signed nor ratified these treaties (Wehtje, 2022).

This research paper aims to contribute to the existing literature by providing a detailed analysis of the space arms race, power dynamics, and political adventurism of China, the USA, and Russia in outer space. The paper aims to address the critical security threats posed by the arms race in space. It highlights that space politics is becoming a significant security concern for the world. Additionally, the study explains the weaknesses of the international legal framework and multilateral collaboration. Despite legal obligations, international treaties, and multilateral cooperation, the space arms race continues to escalate, transforming space from a realm of peaceful exploration to one dominated by political agendas and debris in orbit.

Several scholars have explored this topic in terms of traditional security issues, such as the threats posed by satellite destruction, space weaponization, and the potential for nuclearization in space to conventional warfare. However, this study aims to explain how states' political activities beyond the horizon are leading to a new form of conflict involving data warfare, espionage, clandestine operations, and surveillance by states against one another.

Global powers may avoid direct or conventional war, but the potential for harm from hybrid warfare is increasing due to space weaponization. The term ‘great game’ describes the arms race and the ongoing political machinations of global powers (Deutsch & Gramer, 2022). The weaponization of space by major powers has significant global impacts, affecting not only each other but also the broader international community. This research analyzes these global ramifications and political strategies that threaten national security. The existing legal framework has failed to ensure the peaceful use of space, indicating a need for revision. This paper contributes to the study and understanding of space-related security issues and the ongoing activities of the USA, China, and Russia.

This paper explores the following research questions: What is the grand strategy of the USA, China, and Russia in outer space? What are the principal threats posed by the political adventurism of the USA, China, and Russia in space? Why does the international legal framework fail to control the arms race in space, and what could be the possible shifts in multilateral cooperation and the Outer Space Treaty? Through these questions, the paper aims to address critical security threats and analyze the weaknesses of the current international legal framework in managing space militarization.

Research Methodology

The research in this paper employs a mixed-method approach, utilizing both descriptive and explanatory research methods to meet the research objectives. Qualitative research techniques have been used for data collection, analysis, and in-depth exploration of

existing literature. Secondary data has been meticulously collected, evaluated, and analyzed. Several case studies have also been included to elaborate on the research ideas.

Space Militarization and Strategic Dynamics

The weaponization and military utilization of space are not novel concepts, but they have significantly advanced in the 21st century. Space plays a crucial role in the national security strategies of the USA, Russia, and China, bolstering their capacity to comprehend emerging threats, exert global influence, execute operations, facilitate diplomatic endeavors, and sustain global economic viability. The current and future strategic landscape in space is increasingly characterized by congestion, contention, and competition (Russell, 2022).

A highly anticipated report on USA space activities, released in 2022 by the leading space consulting and market intelligence firm Euroconsult, unveiled that the US government allocated $92 billion to space endeavors, marking an 8% budget increase from 2020. This underscores the commitment of global powers to allocate substantial portions of their budgets to space weaponization, aiming to uphold hegemony both on Earth and beyond. Some researchers posit that while the USA and Russia may collaborate in outer space, the USA harbors concerns about China's burgeoning power in this domain (Gadd, 2021).

However, some research findings suggest a shift in Russian space policy, attributed to two primary reasons. Firstly, the position of Roscosmos in the global space sector has markedly declined. Secondly, Russia is grappling with economic and technological constraints due to Western sanctions, rendering it less reliant on its space infrastructure than China and the USA (Vidal, 2021). Lalitha (2021), in his article, offers a succinct overview of the space race and competition among the three major powers — USA, China, and Russia — in the post-Cold War era. He contends that space power has evolved into a political instrument for the USA, Russia, and China to maintain hegemony in a multipolar world order.

Choo (2021), in his article "The United States and China: Competition for Superiority in Space to Protect Resources and Weapon Systems," argued that China and the USA are fighting for hegemony in space, which has progressed into a high-level strategic battle. However, Russia and China are cooperating and plan to work together in outer space to directly compete with the USA and its partners (Hsiung, 2021). Langeland and Grossman (2021) argued that the USA is becoming more reliant on its space capabilities for its security and prosperity. China perceives the USA's activities as a threat to achieving space supremacy. These recent studies have shown that the USA, China, and Russia are working on their space programs and missions to achieve supremacy in space.

However, there are some limitations in those studies. Ghazala Yasmin Jalil (2023), who is a research fellow at the Arms Control & Disarmament Centre, ISSI, argued in her issue brief that although there are international treaties for arms control in space, there are several challenges in discussing effective regulations between the global states in terms of outer space treaties. She argued that there is a lack of clear definition of what refers to be called a space weapon because there is a blurred boundary between civil and military use of space. All the scholars have made significant contributions to space security. However, a lack of knowledge of other

dimensions of international treaties and multilateral cooperation may limit the global states' interests in space. Also, scholars have explained the militarization of space as a traditional warfare threat, so the literature is somehow deficient in what are the nontraditional security threats through ongoing space adventurism.

Theoretical Framework

Neorealism, or structural realism, emphasizes the anarchic nature of the international system. Neorealists argue that there is no overarching authority in the international system, leading states to rely on self-help, secure their interests, and struggle for survival. Each state pursues its interests and protects its security on land or beyond. The neorealist perspective effectively explains states' behavior in space. The USA, China, and Russia each have their interests. When the USA began its space program, it created a security dilemma for Russia. All these states pursue the development and deployment of space military assets to maintain their strategic advantage and counter the capabilities of potential rivals.

Furthermore, neorealism's skeptical critique of liberal institutionalism offers another view of states' behaviors towards the international community. Neither the USA, China, nor Russia has signed an outer space treaty to limit their weapons in space. This indicates that international institutions have little significant influence on states' behavior toward peace. Powerful states can manipulate institutions to pursue their interests, as neorealism argues. Neorealism posits the ineffectiveness of international institutions in mitigating conflicts and promoting cooperation.

Comprehensive Analysis of Geopolitical Strategies in Space Militarization

Today, the world faces various traditional and nontraditional threats. The lust for power has led major states to secure their interests and compete with others using nontraditional tactics, technological advancements, and unconventional methods. China, Russia, and the USA are engaged in a space race and militarization, countering each other with advanced capabilities and tactics. This political adventurism in space poses a major security threat to all nations. Spying and surveillance can lead to misinformation wars, cyber wars, and propaganda wars between states. Despite international efforts to limit the space arms race and malicious activities, major powers continue to increase their destructive weapons in space. International institutions have been ineffective, as powerful entities influence them. Therefore, states need to recognize the complexities of the space arms race and find common ground to address the nontraditional security issues created by the Space Great Game.

Space Arms Race and Great Game of Great Powers

Since technological advancement, humans have made remarkable progress on Earth and beyond. This technology has expanded the frontiers of exploration, increased our knowledge, and augmented our control over various domains. However, the peaceful potential uses of space in cartography, communication, navigation, and exploration have diminished due to military and political adventurism. Humanity now possesses the capabilities to both enhance life on Earth and destroy it entirely (Jasani, 1978).

The concept of a 'great space game' emerged from the strategic and political confrontations among global powers vying for influence over space resources. Initially, the term "great game" referred to the geopolitical struggle in Central Asia. In the 19th century, the term evolved to describe the pursuit of global power and influence due to

shifts in the international structure (Stegen & Kusznir, 2015). "In the context of great powers, nothing is more important in the competition than the attitude of great powers toward the world" (Novo, 2021, para 8).

Today, the world is contesting various traditional and nontraditional threats. The lust for power has led the world's major states to secure their interests and compete with other states using nontraditional tactics, technological advancements, and nonconventional methods (Andrew, 2021).

Among the global powers, China now has a significant impact on geopolitics through the 'great game.' As a major player, China has expanded its power from nuclear capabilities to economic influence, from the depths of the seas to the heights of space and beyond (Atal, 2005). Although China did not initially participate in the space race and geopolitical maneuvering, changes in the international structure have enabled it to emerge as a leading economic powerhouse, challenging Russia and the USA (Stegen & Kusznir, 2015).

Russia has always aspired to see a multipolar world. Since coming to power, Putin has worked to restore Russia to a powerful and dominant position similar to its status during the Cold War. Russia's increasing capabilities in cyber technology, artificial intelligence, and space modernization have positioned it as a significant player alongside China and the USA (Sarfaraz, 2021). Russia has become a key player in space advancement and weaponization, aiming to counter the USA's dominance and challenge it through technology, space operations, data warfare, and surveillance (Edwards, 2003, p.1).

In contrast, the USA is considered a strategically more competent player than in past years, recognizing the ongoing need to be part of the great game (Hulsman, 2021). America is actively working to counter both China and Russia at higher levels. Former President Donald Trump once stated that merely having a presence in space is not enough for America. He also proposed the creation of a Space Force to ensure American dominance in space (Skibba, 2018). This political adventurism and militarization of space by the USA, China, and Russia appear to be driving the global power race into new realms.

Russia, China, USA and Their Space Political Adventurism in Space

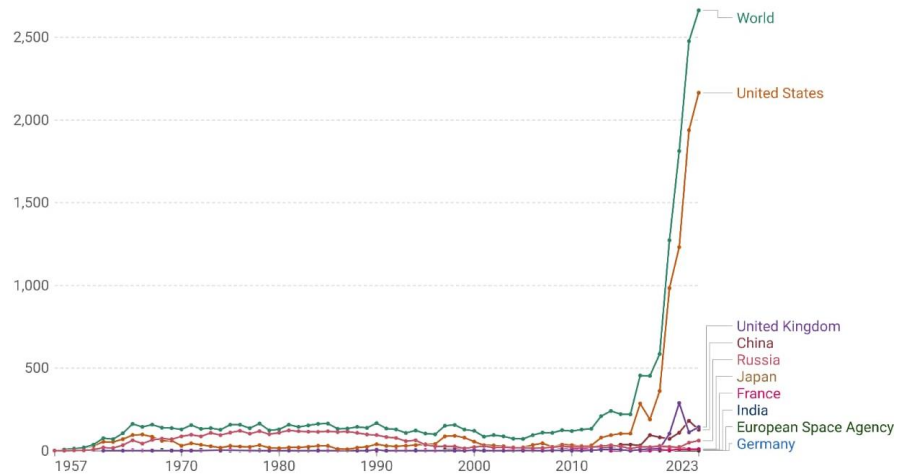
Space competition began between the USA and Russia in 1957 with Moscow's Launch of the world's first artificial satellite, Sputnik 1. China's emergence as a space power occurred in the late 20th and early 21st centuries. Both China and Russia expanded their space military capabilities and integrated counter-space capabilities into their warfighting strategies and national security agendas against the United States (Defence Intelligence Agency, 2022).

China and Russia are trying to end the USA's dominance in space, while the USA is trying to weaponize space to counter China and Russia and maintain its dominance (Warraich, 2022). The USA first tested a nuclear bomb with a series of high-altitude nuclear tests in space, which were known as Fishbowl and Starfish Prime. Starfish prime exploded at an altitude of 250 miles above the height where space orbits are today (Brian Gutierrez, 2021). Russia, China, and the USA have military units specialized in space operations, making space a war-fighting domain. Although these states have developed sophisticated space weapons, such as kinetic and non-kinetic, a conventional war is not expected. The stakes are high as the world has an increased

reliance on connectivity and information, creating new realms of security threats to the world (Wehtje, 2022).

Over the past years, states have vulnerably increased their space budgets (Euroconsult, 2022). The United Nations Office for Outer Space Affairs has given data for several space objects launched between 2023 and 2024, as shown in Figure 1 below. It has shown that many space objects, satellites, landers, probes, crews, and spacecraft have been launched into space. The USA has launched the most significant number of space objects, more than 2000 objects in a year in outer space. Then comes China and Russia, with less than 500 objects yearly (Our World in Data, 2024).

Figure 1. Annual Number of Objects Launched in Space



Source: United Nations Office for Outerspace Affairs (2024)

The most influential actor in space is the USA. With advanced technology and the world's largest spending budget on space, the USA has become a principal threat to its national security. The United States Space Force has become a sixth branch of its military force, responsible for conducting space military and political operations (United States Space Force, 2022). On the other hand, China is working hard on its massive nuclear program to modernize and to modernize the military. President Xi Jinping described his dream of making China a space power. On Dec 31, 2015, China launched the People's Liberation Army 'Strategic Support Force', SSF. Its purpose was to advance its machinery that revolves around and protects satellites, keep an eye on enemies' operations, and retaliate against them (Warraich, 2022).

The SSF's Network System Department focuses on cyber threats and electronic warfare, while its Space System Department executes space missions. Satellite networks, known as constellations, collaborate to perform various functions. Notably, the Global Positioning System (GPS) is a satellite constellation managed by the USA Air Force's Delta Eight, providing free global positioning services. This system supports civilian navigation worldwide and aids in optimizing travel routes for ships, among other functions (United States Space Force, 2022).

Russia has a storied history in space exploration, dating back to the Cold War era when the USSR launched its first satellite. In recent years, Russia has sought to

reclaim its prominent position in space affairs, particularly evident in its crucial role in supplying the International Space Station. However, Russia's stance on space arms control appears contradictory, as it supports limitation agreements while militarizing space. The establishment of the Russian Aerospace Forces in 2015 underscores Russia's commitment to safeguarding its space interests (Ministry of Defence of the Russian Federation, 2022).

Furthermore, Russia operates its satellite navigation system, Glonass, similar to the USA's GPS, providing navigation services to the Russian military and the global community. Launched in 1982 and declared fully operational in 1993, Glonass operates primarily in low and medium Earth orbits. However, the most strategically significant orbital range lies in the geostationary orbit, approximately 35,000 to 40,000 km above Earth's surface (Dolman, 1999). This orbit hosts critical operations, including telecommunications, television broadcasting, and covert communications. The USA's dominance in this orbit is paramount, with its satellites facilitating early warning systems, secure communication channels, and diplomatic messaging, highlighting the significance of the space domain in geopolitical power dynamics.

Principle Threats of Militarization in Outer Space

The escalating intrusion of political interests into outer space has spawned a multitude of threats. Three categories of weapons wielded in space pose significant dangers. First, anti-satellite (ASAT) weapons, capable of destroying satellites from space, ground, or sea, constitute a grave menace. Second, space strike weapons, including lasers or kinetic weapons, hold the potential for extensive destruction. Lastly, Ballistic Missile Defence systems and hypersonic satellites can neutralize incoming missiles or other objects (Jalil, 2023).

Moreover, spying and surveillance are rampant threats in space. In addition to destructive weaponry, states deploy surveillance and data-spying instruments for political maneuvering. China and Russia can target objects in far-reaching orbits, with China strategically positioning installations closer to US space forces, even operating satellites around US geostationary orbits. Espionage tactics involve decoding information obtained from rival satellites to fuel political propaganda, exemplified by both Chinese and Russian actions against US satellites, reciprocated by the USA in its pursuit of space dominance (Singer, 2008).

Furthermore, states have developed weapons enabling direct hijacking or destruction of enemy satellites for data theft. Russia's progress in satellite hijacking, exemplified by the 2014 launch of Kosmos 2499, dubbed 'Kamikaze,' underscores this trend. American surveillance detected suspicious activity surrounding a Russian satellite, ultimately revealing its espionage function, showcasing a tactic mirrored by China and the USA (Scuitto & Rizzo, 2016).

The proliferation of small satellites, known as Nano and Microsatellites, exacerbates surveillance concerns, as they are challenging to detect (Tellis, 2007, p. 42). Additionally, space debris poses a significant hazard. China's 2007 missile launch that collided with its weather satellite resulting in the creation of 6,000 additional debris pieces, underscores the potential for widespread destruction and serves as a stark warning to rivals (Hughes & Lowe, 2009).

Space Arms' Race: Taming New Realms of Security Issues

Throughout centuries of space exploration, humans have derived numerous societal benefits, as space exploration inherently expands human knowledge. From the inception of space flight, it became evident that space exploration catalyzes basic science and technological advancements. However, the emergence of new challenges has necessitated evolving approaches over time. Governments worldwide have increasingly collaborated to undertake complex space missions, showcasing the power of partnerships in achieving milestones in space exploration.

Nevertheless, the proliferation of space wars among powerful states has disrupted life as we know it. Military experts warn that attacks on satellites could cripple essential systems such as GPS, banking, and power grids, severely impacting military operations and daily life. States appear fixated on advancing technology and exploring space without considering the broader implications for the world and its inhabitants.

A significant concern is electromagnetic radiation, an invisible technology satellites can employ to jam communications between ground stations and other satellites. The USA, China, and Russia routinely jam other countries' links with navigation satellites (Westbrook, 2019).

As technology evolves, so do the tactics and methods of warfare. Conventional wars have become increasingly rare, with the world now facing more critical and complex challenges such as cyber warfare and hybrid warfare. While the notion of a war in outer space may sound like science fiction, it is a reality that we must acknowledge could have devastating consequences at any moment (Johnson-Freese,2007).

Space has the potential to become the battleground of the future, posing threats to data security and political stability. Political data can be compromised in space, significantly impacting political decisions on Earth. The spread of disinformation and political interference between states can profoundly affect people's lives in targeted nations (Lenntech, 2006).

Furthermore, intense satellite collisions can trigger solar flares, resulting in space debris, coronal mass ejections, and dangerous cosmic rays that affect objects in space and pose risks to life on Earth. Thus, the stakes extend beyond political agendas to encompass the very natural environment of our planet (Skibba, 2014).

In the ongoing century, the prospect of a great power war looms, yet it will not manifest with ground-shaking explosions; instead, it may ignite from silent flashes of laser light and bursts of kinetic energy in outer space. States have attained the capability to destroy each other's space assets, a potential outcome of future conflicts. Anti-satellite weapons (ASAT) like those developed by Russia can dismantle satellites in space (Banerjee, 2022).

In recent years, Russia launched a satellite purportedly for weather forecasting, only to later destroy it, leaving debris to surveil American satellites for propaganda and policy insights (Warraich, 2022). Similarly, China has deployed permanent blind spy satellites and developed cyber warfare units in space to manipulate control systems. Its advanced hypersonic Fractional Orbital Bombardment System launched in 2021 involves placing nuclear weapons into low-earth orbit. China's aggressive satellite deployment, with 108 out of 1809 satellites launched in 2021,

includes the development of jammers to augment military reconnaissance platforms for space-based surveillance (Banerjee, 2022).

Moreover, China has been engineering co-orbital satellites to neutralize enemy satellites and microwave space weapons capable of direct Earth-based targeting. In response, the USA, China, and Russia are intensifying efforts to deploy directed energy weapons in space. For instance, China has ground-based lasers aimed at US reconnaissance satellites. Conversely, many US reconnaissance satellites surpass Chinese satellite technology, prompting China's assertive space weaponization as a direct threat to US space operations, given the USA's heavy reliance on its space assets (Desmond, 2007).

To counter China's advancements, the USA has fortified its space dominance with over 270 military satellites and established an Operationally Responsive Space office in Mexico. This office aims to deploy smaller satellites with lower boosters for swift satellite replacement, facilitating data collection in outer space. The USA also enhances its counter-ASAT deterrence and develops next-generation technologies to meet emerging challenges (Easton, 2009).

Space Militarization and the International Legal Framework

The United Nations attempted to establish a legal framework to limit the space arms race to protect space from exploitation due to the political and military adventurism of states. Five major treaties were adopted to govern space activities: 'The Outer Space Treaty, 1967,' 'The Rescue Agreement, 1968,' 'The Liability Convention, 1972,' 'The Registration Convention, 1976,' and 'The Moon Agreement, 1984' (Wehtje, 2022). The Outer Space Treaty is the most significant, signed in 1967 to benefit all nations wishing to explore space (Roberd, 2016). This treaty stipulates those states should not develop military bases, test weapons, or conduct other dangerous space-related activities. It asserts that space is accessible to all nations and encourages cooperation for peaceful exploration. The treaty also regards astronauts as envoys and forms the basis of international space law (Panjwani, 2021). Article IV of the treaty explicitly bans the placement of nuclear weapons in space.

In October 2023, the United Nations held the 17th meeting on disarmament aspects of outer space, where states debated ways to sustain space security and prevent weaponization. The debate presented two approaches to preventing an arms race in space: promoting responsible state behavior toward security issues and negotiating a legally binding framework to limit space militarization (United Nations, 2023).

China's representative supported the notion of a legally binding framework to protect space security, stating that many states are unwilling to negotiate such treaties, causing a stalemate. Russian representatives also favored the legally binding approach, acknowledging the need for confidence-building measures and multilateral agreements. The Russian Federation proposed a resolution to establish a separate four-year working group focused on developing legal instruments to address the risk of conflict (United Nations, 2023).

The representative of the United States emphasized the importance of commitments to ensure responsible state behavior towards conflict. The USA supported creating an open-ended group to regulate state behavior but rejected the idea of a no-first-weapon placement policy in outer space (United Nations, 2023).

Weaknesses of International Treaties and Cooperation to Prevent Space Arms Race

Politics often prevents the formation of unlikely alliances. States have been competing for strategic advantages in space for a long time. However, the likelihood of a large-scale conventional war using space weapons in space or on Earth remains low. Nonetheless, specific threats create long-term security issues for states. If space is framed as a battleground, states will continue to deploy and test weapons in space (Connor, 2020).

The existing legal framework has many shortcomings, failing to limit the arms race in space and counter the potential threats of space warfare. For example, the Outer Space Treaty, established in the 1960s, is outdated. Since then, space weapons, actors, states' capabilities, and the international system have dramatically changed. With advancements in technology and warfare methods, the perception of space has shifted from a realm of exploration, science, and fiction to a critical factor in the political and military ambitions of powerful states.

Another weakness of the Outer Space Treaty is its limitation to weapons of mass destruction, such as nuclear weapons, without addressing threats like cyber-attacks, political conflicts, surveillance, micro and nanosatellites, and electronic warfare. Additionally, the dual-use nature of satellites presents ongoing challenges. A satellite claimed for weather forecasting can be a spy satellite used for various malicious purposes, as evidenced by Russia's actions.

International institutions have also been subject to the influence of powerful states. The realist perspective explains how international institutions often work according to the agendas of powerful states. The UN has made declarations on limiting the space arms race. However, neither the USA, China, nor Russia has signed or ratified those treaties, indicating the failure of international institutions to influence major powers. Consequently, international treaties lack legally binding capacities. Moreover, states tend to cooperate only when it aligns with their national interests.

Need for Change

The international system is anarchic, and there is an atmosphere of mistrust. Therefore, when a state chooses to increase its military power, it is either to counter security dilemmas (as Russia and China) or to maintain a status quo of hegemon or superpower (as the USA). The major states will continue to increase their capabilities until and unless there is a proper, legally binding international framework to influence the states or to limit them in specific ways. Even though space is no longer a game field for only major powers, other states are also involved in space activities, understanding the ongoing international culture, opportunities, and needs. If the space race does not stop here, after 30 or 40 years, we will see that space will no longer be for peaceful purposes, and we will all be at the stake of war beyond horizons. States must understand the outcomes of space militarization and political adventurism, and change is needed. States should seek a common ground for a threat that is for all. Even the public must be aware of their governments' *malicious activities* because humans everywhere are against war. Public pressure might bring a change in a state's policy toward wars. There is a lot more to explore in space. Therefore, there should be a peaceful passage for the future.

Conclusion

The concept of the Great Game has evolved with changes in the international structure, as states have reached a point in space where they can destroy the space assets of other countries, affecting future conflicts. Modern developments in space technology, such as satellites, contribute to military, environmental, and communication advancements worldwide. These new challenges have led to new approaches. Over time, governments worldwide have increasingly cooperated on complex space missions, demonstrating the power of partnerships in achieving space accomplishments. Space power has become a political tool for the USA, Russia, and China to maintain hegemony in the multipolar world order. This political adventurism poses potential threats to all nations on Earth. Rather than conventional war, major space powers are steering the world toward nontraditional security issues. The USA can leverage the rise of friendly space agencies and space forces to establish a balance of power in space, while Russia and China's security policies sufficiently protect their space operations. The international legal framework has failed to prevent the space arms race, as treaties like the Outer Space Treaty cannot fully address the threats posed by technological developments in space. International bodies have also failed to influence the behavior of major states due to the anarchic nature of the international system. However, the international system needs a shift in focus. The lack of cooperation in space has led to mistrust, misinterpretations, and a hostile relational environment, which needs to be addressed. States must realize the importance of finding common ground to discuss futuristic and advanced threats. Open discussions among states can provide ideas for standard solutions to space security. As more actors become involved and recognize the importance of space, discussions for solutions need to be more inclusive. If one state demonstrates responsible behavior, it could lead to significant changes in limiting the space arms race.

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