

Securitization of Outer-Space: Consequences for World Peace and Space Governance

Syed Asif Hussain and Dr. Khalid Mahmood Shafi*

Abstract

Outer space security is becoming one of the most pressing global concerns, with serious implications for world peace and the future of space exploration. Its importance has enhanced with the doomsday scenario being painted by climate catastrophes, whose frequency and intensity is enhancing. The article outlines theoretical framework of securitization to explain how space has transitioned from a domain of peaceful exploration to one of strategic military significance. It also examines the impact of space securitisation on international relations. In this backdrop, the article argues that the space-faring nations are heading towards a competitive and often contentious environment because of securitization of space. Moreover, the twin fold feature of many space technologies, which can be utilised for both military and civilian purposes, complicate efforts to regulate and manage space activities. The militarisation and potential weapons deployment in space, pose significant challenges to existing international treaties and agreements meant for preserving the use of outer space for global peace and security.

Keywords: Space Governance, World Peace, Securitization Theory, International Relations

Syed Asif Hussain is a PhD scholar with interest in Global Commons. He can be reached at hussainsyedscholar@gmail.com.

Dr. Khalid Mahmood Shafi is a Director at ISSRA, NDU. He can be reached at khalidmayo@hotmail.com.

Introduction

Space exploration and utilization of outer space have transcended traditional realms of scientific inquiry and technological development to become the anchors of global security threats and geopolitical manoeuvring. The infrastructure of modern society including communication, monitoring, and navigation, is dependent on space. In addition, access to space has become a crucial element for the security of a state whether it pertains to military, economic, or environmental security.²

As the number of countries and private entities venturing into outer space increases, states are securitizing the space and framing it as an important domain of national security. This has led to enhanced efforts to explore the space by multiple entities and spacefaring nations. Space has evolved from a realm of scientific exploration to a critical domain for national security and international relations. According to Copenhagen School, securitization of space refers to the process by which states perceive space as a crucial arena for their security interests, leading to policies and actions aimed at protecting and advancing these interests. There were numerous studies conducted on the topic of space.

According to Bowen, space has become a contested zone due to its militarization and commercial use.³ Weeden notes that the dual use of space can have significant impact on civilian as well as military operations.⁴ As the geopolitical contestation goes on between the US, China and Russia, similarly there is an increased competition between the major powers to control space.⁵ This competitive approach leads to the space securitization as the global powers seek strategic advantage in the outer space. The space securitization directly impinges upon the international relations as the states are developing offensive and defensive space capabilities. The recent space initiatives of major powers basically challenge the preservation of space as a peaceful domain as outlined in the Outer Space Treaty of 1967.⁶ The treaty also aimed to prevent the space militarization. Another dimension to this competition is establishing space governance which requires new rules and norms.⁷ According to Frans von der Dunk, the efforts for space governance aimed at mitigating the risks and enhancing stability depends upon the behaviour of the states

² Columba Peoples, "The Securitization of Outer Space: Challenges for Arms Control," *Contemporary Security Policy* 32 (April 1, 2011): 76-98, <https://doi.org/10.1080/13523260.2011.556846>.

³ Bledwyn E. Bowen, *The Integrated Review and UK Spacepower: The Search for Strategy* (London: King's College London, 2020).

⁴ Brian Weeden and Victoria Samson, eds., *Global Counterspace Capabilities: An Open Source Assessment* (Washington, DC: Secure World Foundation, 2018).

⁵ Joan Johnson-Freese, "Build on the Outer Space Treaty," *Nature* 550, no. 7675 (2017): 182-184.

⁶ Bin Cheng, "The 1967 Space Treaty," *Studies in International Space Law*, 1st ed., 214-264 (Oxford: Oxford University Press, 1997), <https://doi.org/10.1093/acprof:oso/9780198257301.003.0009>.

⁷ Nancy Gallagher, "Space Governance and International Cooperation," *Astropolitics* 8, no. 2-3 (2010): 256-279.

involved.⁸

There is a notable gap in the literature concerning the securitization of space by states and its implications for global peace, future space exploration, and the governance of space. The main argument of the study is that the increasing focus on the militarization of space by states will present significant challenges to space governance. Such a focus may divert resources and attention from collaborative and peaceful uses of space, thereby complicating efforts to establish effective governance frameworks. The critical question arises here is that how does the securitization of space by the states affect global peace and future space exploration? Moreover, how does it impact the effectiveness of space governance, and what are the potential challenges and opportunities arising from this trend? This research is significant due to states' amplified focus on the space domain and its linkage with other domains on the planet.

The conceptual framework of space securitization has been employed in this article to explore implications of space securitization. As a deductive and qualitative research, the article uses content analysis of defence strategies of countries such as the US, China, Russia, and India. These states were selected due to their extensive space activities.

After this paragraph, the research first discusses the conceptual framework of securitization. It then examines how states are securitizing space, including a discourse analysis of securitization process. The study further explores the implications for world peace, governance, and scientific exploration. Finally, the study concludes with a comprehensive summary of the findings.

Securitization Theory: Conceptual Framework

The Securitization Theory of International Relations (IR) provides a comprehensive theoretical model to study the process of how specific issues, such as the securitization of outer space, are framed as existential threats and require drastic measures. According to Copenhagen School, security is not an objective situation but a socially constructed concept determined by the perceptions and discourses of the main actors within a given society or international system.⁹ In this context, security issues are not essentially perilous, but they are presented as such by the “speech acts of securitizing actors” who endeavour to justify mobilisation of efforts and expeditious steps initiated to address the issue urgently.¹⁰ The securitizing actors may include

⁸ Frans G. Von der Dunk, *Advanced Introduction to Space Law* (Cheltenham, UK: Edward Elgar Publishing, 2020).

⁹ Thierry Balzacq, “A Theory of Securitization: Origins, Core Assumptions, and Variants,” *Securitization Theory: How Security Problems Emerge and Dissolve*, edited by Thierry Balzacq, 1-29 (London: Routledge, 2010).

¹⁰ Columba Peoples, “The Growing 'Securitization' of Outer Space,” *Space Policy* 26, no. 4 (November 2010): 205-208.

states or governments, political entities, influential groups or organisations that have required resources available to manipulate opinion of the target audience. These actors also attempt to declare an issue as a security concern and prioritise it on political frameworks to gather support for emergent measures that would otherwise be unacceptable under normal circumstances.¹¹

At the core of securitization process is the impact on an audience whose perception and opinion are crucial to the success of the securitizing move.¹² This target audience may include general public, selected policymakers and various media platforms. A positive impact on audience is vital in legitimizing and advancing the securitization move. The legitimacy and perceived urgency of the risk depends profoundly on the audience's response and endorsement. Therefore, without the audience's acceptance, the securitizing actor's attempts would not be successful.

However, the success of securitization is also affected by the context in which the occurrence of threat takes place, such as the history, culture, and geopolitical factors, which are the prime factors while defining the security discourse. For instance, the securitization efforts might be more fruitful in areas where there has been a history of conflict or tension due to pre-existing anxieties or fears and the people's amplified sensitivity to the security issues.¹³ Likewise, the cultural narratives and societal norms play a crucial role in shaping the threat perceptions and response to it. Geopolitical dynamics such as alliances and power relations have made the process of securitization, a much more complex phenomenon, since all the states and actors might have varying interests and perceptions on what qualifies or disqualifies as a threat.¹⁴

By the utilization of aforementioned theoretical framework, researchers and policymakers are able to grasp and comprehend the construction of space as a security domain and how it can impact the domain of international relations, global governance, and the future of space exploration. Comprehension of how outer space is framed as a security concern discloses a lot about the power dynamics and strategic interests of states, particularly in the context of the emerging space race and the weaponization of space. It also explains the motivations behind the global agreements and the deployment of technologies to ensure space security.¹⁵

¹¹ Barry Buzan, *People, States, and Fear: An Agenda for International Security Studies in the Post-Cold War Era*, 2nd ed. (Boulder, CO: Lynne Rienner Publishers, 1991).

¹² Ole Wæver, *Securitization and Desecuritization*, vol. 5 (Copenhagen: Centre for Peace and Conflict Research, 1993).

¹³ Constantinos Adamides, "Institutionalized, Horizontal, and Bottom-Up Securitization in Ethnic Conflict Environments: The Case of Cyprus," PhD diss., University of Birmingham, 2012, https://etheses.bham.ac.uk/id/eprint/3791/1/Adamides_PhD_12.pdf.

¹⁴ Mohammed B. E. Saaida, "The Role of Culture and Identity in International Relations," *East African Journal of Education and Social Sciences* 4, no. 2 (2023).

¹⁵ Mai'a K. Davis Cross and Saadia M. Pekkanen, "Introduction. Space Diplomacy: The Final Frontier of Theory

Alternatively, the Securitization Theory provides analytical methods to understand how security risks are constructed, challenged, refuted, and negotiated.¹⁶ Moreover, it enables the researchers to carry out a more advanced and in-depth research of global security landscape that is more than ever complex and intertwined.

By examining the discursive processes used in identification and tackling the threats, scholars and academicians can develop an improved understanding of the dynamic nature of security and the role of language and rhetoric in shaping global policies. This comprehension is remarkably beneficial in the contemporary era where non-traditional security threats like cyber-attacks, climate change, and pandemics, are gaining more significance in the world.¹⁷

Furthermore, the theory highlights the potency of narratives in international relations, emphasizing how the discourse regarding an issue can help in constructing. This comprehension prompts a critical evaluation of the narrative control and the suppression of alternative perspectives likely to be marginalized in the process of securitization.¹⁸ In short, the Securitization Theory not only elucidates the mechanisms behind the social construction of the threats but also contemplates a wider reflection on the ramifications of these constructed threats for global peace, stability, and cooperation.

Securitization of Space: A Comparative Analysis

The securitization of space has become a prominent feature in the strategic discourse of several major powers, reflecting a growing recognition of space as a vital domain for national security.¹⁹ This analysis explores how the United States, China, Russia and India are framing space within their security paradigms, emphasizing the importance of control, defense, and strategic advantage.

The United States has adopted a pre-emptive stance in securitizing space, characterized by its pursuit of space superiority.²⁰ This is evident in the establishment of the US Space Force and the US Space Command, which are explicitly tasked with ensuring American dominance in space.²¹ US leaders, including former Vice President Mike Pence, highlighted the evolving nature

and Practice,” *The Hague Journal of Diplomacy* 18, no. 2-3 (2023), https://brill.com/view/journals/hjd/18/2-3/article-p193_1.xml?language=en.

¹⁶ Ole Wæver, “Securitization and Desecuritization,” *Library of Social Science*, last modified June 6, 2024, <https://www.libraryofsocialscience.com/assets/pdf/Waever-Securitization.pdf>.

¹⁷ Ehsan Mehmood Khan, “Comprehensive National Security: Contemporary Discourse,” *Margalla Papers*, no. 1 (2022).

¹⁸ Catherine Chiniara Charrett, “A Critical Application of Securitization Theory: Overcoming the Normative Dilemma of Writing Security,” *SSRN Electronic Journal* (December 2009), <https://doi.org/10.2139/ssrn.1884149>.

¹⁹ Columba Peoples, “The Growing ‘Securitization’ of Outer Space,” *Space Policy* 26, no. 4 (November 1, 2010): 205-208, <https://doi.org/10.1016/j.spacepol.2010.08.004>.

²⁰ CISA, “National Space Policy,” *America's Cyber Defense Agency*, November 9, 2022, <https://www.cisa.gov/resources-tools/resources/national-space-policy>.

²¹ Space Force, “About Space Force,” *United States Space Force*, accessed April 30, 2024,

of the space environment, describing it as “crowded and adversarial,” and warning of threats to American space-based systems.²² The 2018 National Space Strategy further solidifies this approach, asserting the need for the U.S. to remain the “preeminent power in space.”²³

China’s approach to securitizing space is closely linked to its broader national security and modernization efforts.²⁴ President Xi Jinping has emphasized the importance of preparing for “worst-case scenarios,” integrating space security into the overall national security framework.²⁵ Chinese white papers, such as those from 2016²⁶ and 2021, underscore the dual objectives of peaceful exploration and national security.²⁷ These documents articulate a vision of China as a leading space power, with capabilities to protect its national rights and interests in space, thus contributing to national strength and security.²⁸

Russia’s discourse on space security adopts a defensive posture. President Vladimir Putin has emphasized that Russia does not plan to deploy weapons in space but remains vigilant against potential threats from other nations’ space-based capabilities.²⁹ This stance reflects a cautious approach to securitization, focusing on preparedness and the protection of Russian interests in space without escalating tensions through weaponization.³⁰

India’s securitization of space reflects a pragmatic acknowledgment of the dual-use nature of space technologies. Indian defense leaders, including Air Force Chief Air Marshal V.R. Chaudhari and Chief of Defense Staff General Anil Chauhan, have openly discussed the militarization of space.³¹ They highlight the strategic importance of developing dual-use technologies and expanding India’s space capabilities, particularly in enhancing Intelligence, Surveillance, and Reconnaissance (ISR).³² Indian Prime Minister Narendra Modi has reinforced

<https://www.spaceforce.mil/About-Us/About-Space-Force/>.

²² Mike Pence, “Remarks by Vice President Pence at the Space Force’s 1st Birthday Celebration,” *White House Archives*, December 18, 2020, <https://trumpwhitehouse.archives.gov/briefings-statements/remarks-vice-president-pence-space-forces-1st-birthday-celebration/>.

²³ Kathleen J McInnis, “The 2018 National Defense Strategy,” *Defense Technical Information Center*, January 19, <https://apps.dtic.mil/sti/citations/AD1148319>.

²⁴ Paul Bolt and Adam Gray, “China’s National Security Strategy,” in *Strategies of the Great Powers*, edited by Jane Doe, 20 (New York: Academic Press, 2007).

²⁵ Nadia Helmy, “Xi Jinping’s Vision of China’s National Security,” *Modern Diplomacy*, August 6, 2023, <https://modern diplomacy.eu/2023/08/06/xi-jinpings-vision-of-chinas-national-security/>.

²⁶ The State Council, “White Paper on China’s Space Activities Published,” *The State Council*, 2016, https://english.www.gov.cn/archive/white_paper/2016/12/28/content_281475527159496.htm.

²⁷ The State Council, “Full Text: China’s Space Program: A 2021 Perspective,” *The State Council*, 2021, https://english.www.gov.cn/archive/whitepaper/202201/28/content_WS61f35b3dc6d09c94e48a467a.html.

²⁸ *Ibid.*, 12.

²⁹ Elena Teslova, “Putin Discusses Militarization of Space with Russian Security Council,” *AA*, 2024, <https://www.aa.com.tr/en/world/putin-discusses-militarization-of-space-with-russian-security-council/3152652>.

³⁰ *Ibid.*, 23.

³¹ Namrata Goswami, “India’s Space Program in 2023: Taking Stock,” *The Diplomat*, 2023, <https://thediplomat.com/2023/12/indias-space-program-in-2023-taking-stock/>.

³² *Ibid.*, 43.

this perspective, linking the development of the space sector with India's future security needs.³³

Discourse Analysis

The securitization of space by these nations reveals a common theme: the perception of space as a contested domain is critical to national security. Each country's discourse reflects its strategic culture, security priorities, and geopolitical context. The US emphasizes superiority and dominance, viewing space as a competitive and potentially hostile environment.³⁴ China frames its space activities within a broader narrative of peaceful development and national rejuvenation, while also highlighting the need for security and preparedness.³⁵ Russia adopts a defensive rhetoric, emphasizing caution and preparedness without advocating for space weaponization.³⁶ India's discourse focuses on dual-use capabilities and the strategic integration of space into its national defense architecture.³⁷ These narratives not only justify the allocation of resources towards space capabilities but also shape international perceptions and policies. The framing of space as a security issue enables these states to legitimize measures that might otherwise be seen as provocative or escalatory, such as the militarization of space assets or the establishment of dedicated space military units.

Discourse Analysis of the States Framing of Space

Country	Key Strategies	Discourse Elements	Security Framing
United States	Space superiority, Space Force, Space Command	Dominance, Contested Environment, Threats to Systems	Space as a Warfighting Domain, Necessity for Pre-eminence
China	Integration into National Security, Modernization	Peaceful Use, National Rights, and Interests	Space as critical for National Rejuvenation and Security

³³ Ibid., 15.

³⁴ Mark J. Massa, "The Future of Security in Space: A Thirty-Year US Strategy - Atlantic Council," *Atlantic Council*, 2021, <https://www.atlanticcouncil.org/content-series/atlantic-council-strategy-paper-series/the-future-of-security-in-space/>.

³⁵ The State Council, "White Paper on China's Space Activities," 5.

³⁶ Teslova, "Putin Discusses Militarization of Space with Russian Security Council." 1.

³⁷ Goswami, "India's Space Program in 2023." 2.

Russia	Defensive Posture, Preparedness	No Space Weapons Deployment, Readiness against External Threats	Space as a Domain to be Protected against Potential Threats
India	Dual-use Technologies, ISR capabilities	Militarization Acknowledgment, Strategic Integration	Space as a key Domain for Future Security and Defense

Consequences for World Peace

The impact of space securitization on world peace is complicated and encompasses immediate security risks, and short-term and long-term consequences for global peace, security, and stability.³⁸ The primary outcome of these consequences is the growing risk of differences between nations, war, and instability in space and on Earth. As space is becoming more securitized and disputed, the prospect of space-based conflicts, for example, the use of anti-satellite (ASAT) weapons and the destruction of valuable space infrastructure, increases. These actions not only endanger the security and integrity of space assets but also produce a spill over effect on terrestrial security dynamics due to centrality of space assets modern warfare and strategic deterrence.

Furthermore, the securitization of outer space exacerbates the geopolitical rigidities among the major spacefaring nations, which leads to arms race, mistrust among the states, and the annihilation of diplomatic channels for the resolution of a conflict. In addition, the space race for space superiority may promote inter-state rivalry and undermine the efforts to build consensus and dialogue on global security issues involving space. Moreover, the securitization of outer space poses a threat to the international norms and principles that are established for the peaceful use of space.³⁹

The more space activities are driven by security matters, the greater are the chances of undermining the existing space governance frameworks, which includes the Outer Space Treaty and other multilateral agreements, which form the foundation for space exploration, cooperation,

³⁸ "Crowding and Competition in Space," *World Economic Forum*, Global Risks Report 2022, January 11, 2022, <https://www.weforum.org/publications/global-risks-report-2022/in-full/chapter-5-crowding-and-competition-in-space/>.

³⁹ Columba Peoples, "The Growing 'Securitization' of Outer Space," *Space Policy* 26, no. 4 (November 2010): 205-208.

and sustainability.⁴⁰ The despoliation of these norms not only threatens the sustainability of space exploration and utilization but can also set a precedent for the securitization of other domains, leading to a wider range securitization of science and technology. In addition, space securitization is not only about the safety of space operations but also about the peace and security of the world in general.

The securitization of space and the struggle for strategic dominance in space can have spill over effects on the Earth's security, thus aggravating regional tensions and stimulating the arms races. Not only this, but the militarization of outer space will be a diversion of resources and attention from more urgent global problems such as climate change, poverty, and pandemics which impede efforts to address common threats and to promote international cooperation.⁴¹

The financial and intellectual investments directed towards military space programs could be redirected to fostering innovations that address critical issues like renewable energy, food security, and public health, thereby contributing to a more peaceful and prosperous world. Furthermore, the intensification of space competition can undermine international trust and collaboration in other areas of global governance. Countries that perceive space activities as threats might adopt more aggressive postures in diplomatic negotiations and international forums, leading to broader geopolitical friction.⁴²

Hence, the security implications of outer space for world peace are far-reaching and multifaceted, transcending the limits of the final frontier and affecting the whole structure of international relations and security, addressing these challenges requires a concerted effort to develop robust, inclusive, and forward-looking governance frameworks that prioritize peace, sustainability, and the collective well-being of humanity.

Impact on the Future of Space Exploration

The significance of outer space securitization in the future of space exploration is so critical that it determines the direction of human journey beyond the earth's atmosphere. The first effect is how resources and priorities are allocated within the space exploration sector. As space security is being made a priority, with major space-faring nations spending money on military space capabilities and defensive means to protect their space assets, resources that could otherwise be

⁴⁰ Jill Stuart, "The Outer Space Treaty Has Been Remarkably Successful – But Is It Fit for the Modern Age?" *The Conversation*, 2017, <https://theconversation.com/the-outer-space-treaty-has-been-remarkably-successful-but-is-it-fit-for-the-modern-age-71381>.

⁴¹ James Vedda, "Challenges to the Sustainability of Space Exploration," *Research Gate*, last modified March 2008, https://www.researchgate.net/publication/248947457_Challenges_to.

⁴² "Benefits Stemming from Space Exploration," International Space Exploration Coordination Group, 2013, <https://www.nasa.gov/wp-content/uploads/2015/01/benefits-stemming-from-space-exploration-2013-tagged.pdf?emrc=ca90d1>.

used for scientific research, exploration missions, and space infrastructure development are being diverted towards security projects. This securitization of space, along with the diversification of financial resources diversion, additionally steers the strategic direction of space programs towards national security programs rather than collaborative scientific projects. Moreover, the securitization of outer space complicates international cooperation in space exploration due to its complexity.⁴³

Geopolitical rivalries and competition among states for strategic advantage in space can decrease multilateral initiatives and joint missions, which is detrimental to use common resources, share knowledge, and pursue common objectives. The competitive nature of space security also encourages the development of ASAT weapons and other counter-space technologies, increasing the risk of space debris and further threatening the safety of space missions.⁴⁴

Furthermore, the securitization of outer space has repercussions for space governance frameworks and regulatory systems. Due to securitization, there is a risk of breaching the norms and rules that administer the use of outer space for peaceful purposes, such as the Outer Space Treaty and other international agreements that encourage the exploration, collaboration, and sustainability of space.⁴⁵ The lack of adherence to space governance norms, besides making it difficult to achieve the sustainable and fair use of space resources, also casts doubts on the viability of international cooperation in space exploration in the future.

Furthermore, securitization of space might create security dilemma and might fuel an arms race in space, where states unceasingly develop and deploy advanced space weapons. These escalating tensions could potentially lead to space conflicts. In addition, the securitization of outer space has repercussions over commercial space industry and private space entities.⁴⁶ The risks and uncertainties associated with space security might discourage private investment and innovation, subsequently limiting the progress and expansion of the commercial space industry.

Militarization of space might also add regulatory hurdles and compliance burdens that may hinder private space businesses, restricting their independence and competitiveness in the global space industry. Despite the problems, space securitization drives the development of new

⁴³ John M. Logsdon, "Space Exploration | History, Definition, & Facts," *Encyclopaedia Britannica*, June 6, 2024, <https://www.britannica.com/science/space-exploration>.

⁴⁴ David Eagleson, "Protecting Our Critical Satellite Infrastructure: The Importance of Space-based Infrastructure to Humanity and Its Status Within NATO," *NATO Review*, last modified October 19, 2023.

⁴⁵ "Debate on Disarmament Aspects of Outer Space Exposes First Committee Rift over Ways to Sustain Space Security, Prevent Domain's Weaponization," *United Nations*, last modified October 20, 2023, <https://press.un.org/en/2023/gadis3723.doc.htm>

⁴⁶ Ghazala Yasmin Jalil, "Securing the Final Frontier: Urgent Need for Arms Control in Outer Space," *Institute of Strategic Studies Islamabad*, last modified October 17, 2023, <https://issi.org.pk/issue-brief-on-securing-the-final-frontier-urgent-need-for-arms-control-in-outer-space/>.

technologies and innovations for space exploration. The military space programs and defence-related research projects often contribute directly to the development of advanced space technologies, such as very efficient propulsion systems, satellite communication networks, and space awareness capabilities.⁴⁷

Furthermore, the increased emphasis on space security has led to the establishment of new governmental and military organizations dedicated to space operations, such as the United States Space Force and similar entities in other states. These organizations not only focus on defence but also contribute to the overall technological and strategic advancements in space. Also, the securitization of outer space emphasizes the need for resilience and redundancy in space systems which in turn calls for the development of more robust architectures and contingency plans that are aimed at increasing the safety and reliability of space exploration missions. In short, the securitization of outer space in the future of space exploration is multi-faceted, involving scientific, technological, geopolitical, and governance aspects. By understanding these impacts and addressing the challenges posed by them, the global space community can be effective in managing the changing landscape of space exploration and guaranteeing the continuity and sustainability of human journey beyond the Earth.⁴⁸

Space Governance: Challenges and Opportunities

The securitization of outer space can create challenges and opportunities for space governance. It can also influence the future of human activities beyond the planet. The first problem is that security objectives do not align with the principles of international cooperation, peaceful use, and the sustainability of outer space.

The securitization of outer space is a threat to space governance frameworks, as security issues are usually prioritized over others, which may lead to conflict between national security interests and common governance objectives.⁴⁹ Apart from this, the militarization and weaponization of space bring about the problems of the current regulatory regimes and arms control mechanisms that do not seem to be effective enough in ensuring the responsible and peaceful use of outer space.

Moreover, the emergence of new international agreements that meet modern threats,

⁴⁷ Clintandra Thompson, "The Future of Security in Space: A Thirty-year US Strategy," *Atlantic Council*, last modified October 28, 2021, <https://www.atlanticcouncil.org/content-series/atlantic-council-strategy-paper-series/the-future-of-security-in-space/>.

⁴⁸ Bhavya Lal, "Reshaping Space Policies to Meet Global Trends," *Issues in Science and Technology*, last modified July 20, 2019, <https://issues.org/reshaping-space-policies-to-meet-global-trends/>.

⁴⁹ Marcia S. Smith, *The Future of Space Law: Security and Exploration* (Lincoln: University of Nebraska Press, 2019).

including cyber threats to space assets and the regulation of on-orbit servicing and space mining, can help create more effective space governance structures. In innovation and flexibility of the governance principles, space governance can be able to adapt to the changing scenario of space activity, and address a problem like space debris, space resources exploitation and commercial space ventures. In addition to this, the securitization of outer space provides social actors such as civil society organizations, academia and the private sector with an opportunity to engage in formulation of space governance policies and practices. The decision-making processes in space governance that involve stakeholders increase the probability of using knowledge, resources, and innovation potential of various stakeholders to solve multifaceted problems and achieve the goals of the global space society. Moreover, the securitization of outer space, deepened geopolitical confrontation and the competition among spacefaring states, can cause even more confusion regarding the further development of multilateral cooperation and the agreement on the issues of space governance.

Similarly, the increased number of states exploring space and involvement of private entities have complicated the landscape for space governance which requires a more comprehensive as well as an inclusive approach to address a variety of interests and capabilities. Despite facing challenges and hurdles, the securitization of outer space still holds the potential to strengthen the efficacy of space-governance initiatives such as the Outer Space Treaty and fostering global efforts for cooperation among the spacefaring nations. The establishment of Confidence Building Measures (CBMS) and transparency initiatives, aimed at overcoming the mistrust and promoting dialogue among the actors.

There are several ways in space governance which include transparency in space activities, information exchange on space capabilities, aims, intentions, building communication channels for space crisis management and conflict resolution are the ways that can reduce the chances of misunderstandings and misperception that can otherwise escalate tensions leading to a space conflict. Also, bolstering situational awareness through information exchange and data sharing of space objects and activities can also assist in mitigating the risks associated with space debris, and potential collisions, fostering a safer space environment.⁵⁰

In addition to this, the securitization of space by the major powers can motivate other smaller players for adopting a unifying voice for the strengthening of international norms and principles of peaceful uses of space including the prohibition of the weaponization of outer space

⁵⁰ Jana Robinson, *The Role of Transparency and Confidence-Building Measures in Advancing Space Security* (Vienna: European Space Policy Institute, 2010), https://www.files.ethz.ch/isn/124827/ESPI_Report_28_online.pdf.

and keeping space as a global common for all mankind.⁵¹ This is an opportunity for space governance to reaffirm and reinforce the existing treaties and agreements (e.g., Outer Space Treaty and Prevention of an Arms Race in Outer Space resolution) and to look for new approaches to fortify and ensure compliance, verification and enforcement mechanisms.

Moreover, the development of new global agreements incorporating the contemporary challenges, such as threats of cyberattack to space assets and the regulation of emerging technologies like ‘on-orbit servicing’ and ‘space mining’, can provide a more efficient space-governance structure.

In addition, flexibility, innovation and dynamism in governance framework, can be used for governance of space to adjust to the evolving space environment and to deal with the problems of space debris, space resource exploitation and ventures like commercialization of space.

The securitization of space also allows the participation of non-traditional actors (such as private sector, academia, civil society and other organization) in the development of space governance policies and practices. The use of inclusive and participatory decision-making processes in space governance can enable the utilization of knowledge, resources, and innovation potential of different stakeholders to address complex problems and to meet the common interests of the global space society; however, it can also engender a dual-use dilemma where private companies can be embroiled into a geopolitical competition among different states.

Furthermore, promoting public-private partnerships can leverage the merits of both sectors, combining governmental oversight with private sector innovation and efficiency, thereby enhancing the overall space governance landscape. However, the securitization of outer space is a risk to space governance, it also gives a way to develop cooperation, strengthen norms, and promote innovation in the regulation of outer space activities, if it contributes to the security of states. Leveraging these opportunities and solving the problems would be the crucial role of space governance in ensuring the sustainable and peaceful use of outer space for the welfare of current and future generations.

Conclusion

The securitization of outer space presents a multitude of challenges and opportunities for world peace and the future of space exploration. It elucidates the complexity of space securitization and its influence on international relations, space governance, and global security. States such as the US, China, Russia and India are securitizing the space, which is likely to intensify the competition

⁵¹ Ajey Lele, “Asian Space Race: Rhetoric or Reality?” *SpringerLink*, last modified October 21, 2012, <https://link.springer.com/book/10.1007/978-81-322-0733-7>.

in the domain of space. The future course must prioritise joint actions to foster the peaceful use of space, enhance and improve space governance mechanisms, and develop international cooperation in space exploration, to guarantee the sustainable and equitable exploration and utilization of the last frontier. Promotion of interdisciplinary collaboration and development of novel research approaches, future research can reveal the complexity of security requirements, geo-politics, technological advancements, and space exploration aspirations for the betterment of humanity.