

Small states' efforts on militarization outer space uncertainties in the twenty-first century: a Kantian triangle perspective

Зусилля малих держав щодо мілітаризації космічного простору, невизначеності в двадцять першому столітті: перспектива трикутника Канта

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Received: November 22, 2023 | **Revised:** December 11, 2023 | **Accepted:** December 31, 2023

DOI: 10.33445/sds.2023.13.6.3

Purpose: to reveal the phenomenon of rapid development of technology in the twenty-first century that affects countries around the world to find other promising geopolitical spaces apart from air, land, and sea namely outer space which at the same time increases military competition and outer space militarization that creates uncertainty to the small states.

Method: using the qualitative method that develops an in-depth analysis of social phenomena, through various sources such as government official documents, books, article journals, and online news articles.

Findings: the small states' effort to face the militarization of outer space in the twenty-first-century era which was influenced by massive technological development and increased military competition by great-power countries is by applying the Kantian Triangle perspective which consists of three components democracy, economic interdependence, and international organization to build peace, stability, and prevent conflict in the anarchy system of international politics.

Paper type: theoretical.

Мета роботи: розкрити феномен швидкого розвитку технологій у двадцять першому столітті, який впливає на країни по всьому світу, щоб знайти інші перспективні геополітичні простори, окрім повітря, суші та моря, а саме космічний простір, який водночас посилює військову конкуренцію та зовнішню мілітаризацію космосу, яка створює невизначеність для малих держав.

Метод дослідження: використано якісний метод, який розвиває поглиблений аналіз соціальних явищ за допомогою різних джерел, таких як державні офіційні документи, книги, журнали статей та статті онлайн-новин.

Результати дослідження: намагання малих держав протистояти мілітаризації космічного простору в епоху двадцять першого століття, на яку вплинув масштабний технологічний розвиток і посилення військової конкуренції з боку великих держав, ґрунтуються на застосуванні перспективи трикутника Канта, яка складається з трьох компонентів. демократія, економічна взаємозалежність і міжнародна організація для побудови миру, стабільності та запобігання конфліктам у системі анархії міжнародної політики.

Тип статті: теоретичний.

Key words: militarization outer space, Kantian triangle, small states.

Ключові слова: мілітаризація космічного простору, трикутник Канта, малі держави.

1. Introduction

The 21st century known as the current period is identical to the post-Cold-War era, where there is a shifted security dimension from traditional to non-traditional, the emergence of several non-state actors, and advanced technology (Divya Srikanth, 2014). Technology has developed rapidly and played an important role in international relations which connected countries worldwide in economic, political, and security fields (Anton K. and Martin S, 2021). The security aspect in today's

era is also affected by advanced technology, where security threats have been developed and created by advanced methods that are different from preceding centuries.

Improvement in technology has significantly influenced countries around the world to develop their defense strategy with technological elements, which the nations are trying to enhance their advanced weaponry, surveillance systems, and communication technologies into their defense system with the aim of increasing their military capabilities to protect the national security (Kementerian Pertahanan Republik Indonesia, 2021). In addition, the technology also creates a new battlefield of security threats that were previously conducted on land, air, and sea which is called outer space (Morgan Brennan, 2023).

Outer space by definition refers to the empty physical of the universe outside the earth's atmosphere (New World Encyclopedia, 2023). Technology innovation has successfully supported the exploration and research of outer space and at the same time influenced countries around the world to develop their technology capabilities (Riel Miller, Wolfgang Michalski, and Barrie Stevens, 1998). The current important issue related to outer space and security is related to countries that are in competition to rapidly develop their technology capabilities to encourage a broader political agenda and increase their power and influence in outer space, known as the militarization of outer space.

The growing importance of outer space in the 21st century is marked by the ambitions of great-power countries such as the United States, Russia, The People's Republic of China (PRC), European countries, and middle-power countries India and Japan which are formulating space-based defense technologies with the aim of national security interest (James Clay Moltz, 2019). Each country has established significant missions and programs that transformed outer space into crucial infrastructure for defense strategies, where they develop weaponry and military technology as part of new operating locations for military activities (James Clay Moltz, 2019).

However, the implication of militarization of outer space creates dynamics and uncertainty that drive tension in the arms race at the global security levels. Space tension between countries intensely increased after several major powers pushed their military space capability through the aggressive space defense policy (Ridha Aditya N and Taufik Rachmat N, 2022). In 2017 for example, the PRC tested its satellite program and succeeded in destroying another satellite using anti-satellite weapons, at the same time motivating the US to launch test ballistic missile interceptors on their spy satellites with the aim of ensuring public safety (Secure World Foundation, 2017).

Furthermore, this topic of militarization of outer space is important and related to the small state's security stability that faces the challenges in an increasingly contested and weaponized space domain. The lack of space technology capabilities of small states has encouraged them to prioritize creating peaceful uses of outer space and ensure that space shall be free to explore and used by all nations without any claiming of space sovereignty by one entity. Therefore, this research will focus on the small state's effort to face the 21st-century militarization of outer space using the Kantian triangle perspective.

2. Data and methods

The research method has become an important part of the research because it is related to the process of gaining the data that is used to answer the research problem, and this research will use the qualitative research methodology, which focuses on understanding social phenomena. Qualitative is a descriptive method that develops in-depth analysis to gain comprehensive data, and the researcher becomes a key instrument for understanding the topic of research (John W. Creswell, 2014). The data collection technique of this research used various sources such as government official documents, books, article journals, and online news articles.

The qualitative method also involves the theory as a guideline for the research and interpretation of the data findings. According to this research, the theory that will be used is the Kantian Triangle to analyze the research subject which is the phenomena of militarization of outer space in the twenty-first century that becomes a new security threat that creates a new battlefield, and the research object is the small-state efforts in addressing the uncertainty and challenges arising from the militarization of the outer space to protect its national security and stability.

3. Results and Discussion

The militarization of outer space by great power countries has shown how the arena matters for their security interest. The advanced technology became a key instrument for great powers to increase and develop their military capability in outer space. The defense policy that includes outer space in the defense strategy has been established since the Cold War era when the Soviet Union on October 1957 launched Sputnik which is the first world’s artificial satellite (Ian Kennedy, 2005).

Undoubtedly, the United States responded to that phenomenon as a threat, they were concerned it was dangerous to the nations and finally in December 1957 the US also launched its first national satellite called Vanguard, however, it crashed during the process (Ian Kennedy, 2005). The competition in outer space after the end of the Cold War has continued, in the multipolar system there are many countries focused on developing the technology capability to support the defense agenda.

In the Asia region, the trend of militarization in outer space also strongly increased, and the emerging superpower countries The People’s Republic of China (PRC), Japan, and India also have launched their first satellite. Outer space has been developing to be the fourth dimension of modern warfare joining the land, sea, and air (HWW Ranasinghe, 2019). The defense policy of the countries also considers the strategy to deploy offensive and defensive modern weapons.

In the twenty-first century era where technology rapidly advances outer space has a more significant role in defense fields for various interests. The great powers countries such as the US, Russia, and the PRC have actively increased the defense outer space budget, according to the data from the World Economic Forum in 2013 the US-led space spending and the PRC second position, and Russia is in third position (World Economic Forum, 2016). Furthermore, in 2022 global military space spending increased by \$54 billion from \$45 billion in 2021, and the US still dominates (Theresa Hitchens, 2023).

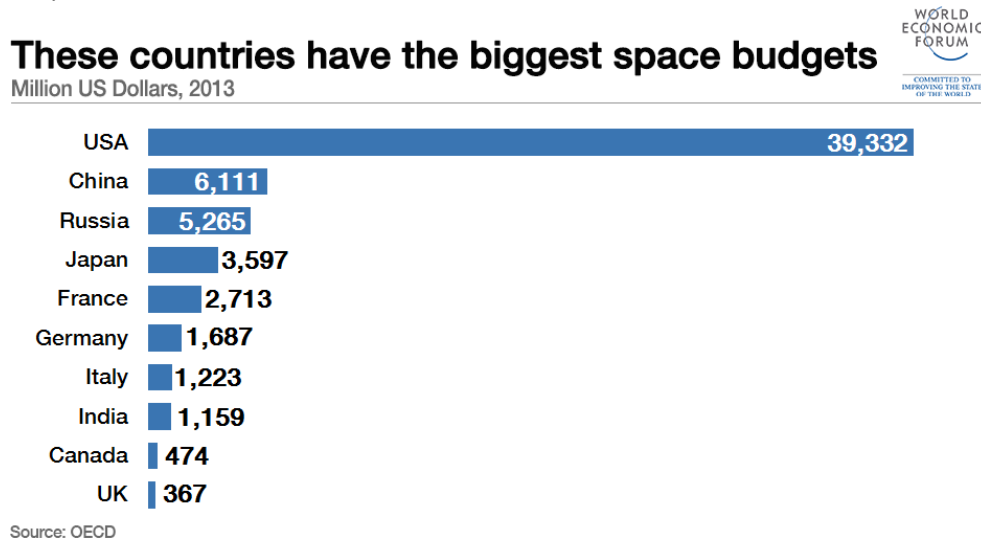


Figure 1 – Global Biggest Space Budgets
Sources: (World Economic Forum, 2016)

The United States’ domination in outer space has also increased the PRC’s ambitions to develop more advanced space technology and has successfully made history by becoming the first nation to land an uncrewed spacecraft on the far side of the moon which NASA has not done and still struggling to build that spacecraft (Christian Davenport, 2019). This phenomenon has shown that space will continue to become an important dimension in the future where the great power countries enhance their strategy to maximize space power.

In the twenty-first century, outer space related to advanced technology has become an integral aspect for modern countries around the world which interdependence to fulfill basic needs such as communication, navigation, weather forecasting, finance, earth observation, and national security (Mark Waters, 2023). A number of countries called great power has dominated access and used outer space for various interest which increased space’s role in countries’s domestic and international agenda especially in defense sectors.

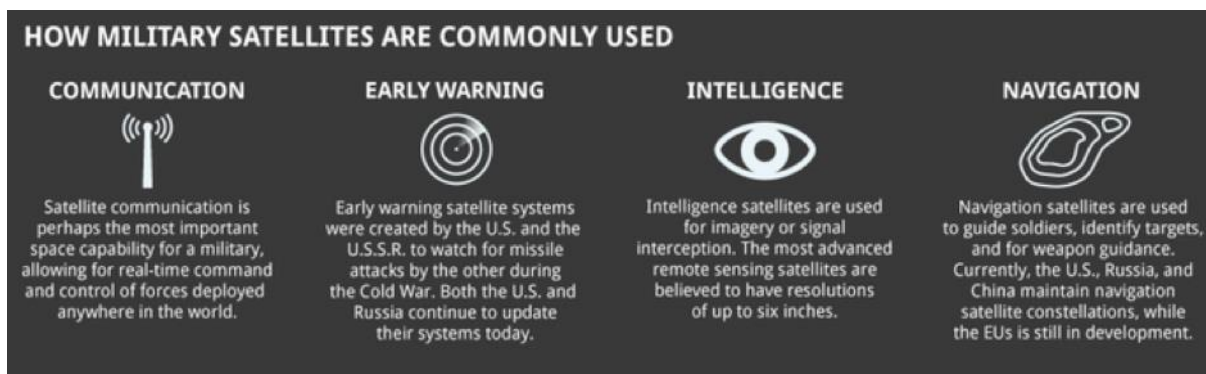


Figure 2 – Military Satellites Commonly Used
Sources: (UCS Satellite Database Space Security Index, 2012)

Military use in outer space is not a new security issue yet it has developed and become more advanced in the twenty-first century, the main actors are great powers that have developed and tested sophisticated space capabilities (Betty Wehtje, 2023). Outer space is the place that is generally a source of human life as a peaceful purpose, however at the same time has shifted to deter and prevent threats in the form of self-defense of countries with its advanced space weaponry (Alif Nurfakhri Muhammad, 2019).

National security and the issue of outer space militarization are connected to each other which has been a long story since the Cold War period when space began to take a role as the military communications that launched satellites used for military reconnaissance (Betty Wehtje, 2023). However, the national security and militarization of outer space become more complex in the twenty-first century where countries around the world especially the great power who has the capability of space weaponry significantly dependent on space infrastructure for their defense development strategy (Betty Wehtje, 2023).



Figure 3 – Map of Countries’ Militaries with Space-Based Capabilities
Sources: (Cameron Tulk, 2013)

However, the militarization in outer space by great powers has created challenges for the small states, which lack the technological capability to produce space-based military power. The important aspect of small states in the twenty-first-century era related to the increasing militarization space that creates uncertainty is to maintenance of peace and stability both nationally and globally. The complexity of the militarization of outer space which is potentially controlled by various actors, emphasizes the small states' efforts to ensure outer space is free, open, and used responsibly for peaceful purposes (Joan Johnson Freese, 2016).

The small states mostly have the national interest which is related to pursuing the security stability, prosperity, and well-being of their citizens with the objectives of developing and advancing their capability in many aspects such as economic, political, social, and security (The World Bank, 2023). Furthermore, small states are also particularly vulnerable to many threats such as economic shocks that create debt, natural disasters, climate change, transnational crime, also cybersecurity in the era of massive developing technology.

Moreover, the small states are facing serious security challenges in the twenty-first century the era of technological developments which are related to the issues of militarization of outer space by great powers countries. Limited access to outer space has become a security concern for small states to fulfill national security interests and more susceptible to various challenges and risks (Joan Johnson Freese, 2016). The financial constraints and lack of technology and resources have limited small states from developing and maintaining their outer space capability to establish their military space program.

Influence by great powers countries on the militarization of outer space has vulnerable the small states into a security dilemma. The small states will face uncertain and instability environments leading to the space arms race that increases regional and global tension. The new dimension of the battlefield that today appears is expanding the future role of outer space that is influenced by policy and technologies of great powers and at the same time implication to the position of small states in international politics where they must take action and decisions to maintain their role and contribution in the space domain.

The efforts of small states in the uncertain situation of militarization in outer space are relevant to one of the international relations perspectives namely the Kantian Triangle by Immanuel Kant. The Kantian Triangle is the idea of how to create peace in international politics, according to Kant peace will occur if the states as the main actors in international politics voluntarily attach to three components as follows, first democracy, second economic interdependence, and third international organization (Bob Sugeng H, 2017).

The Kantian Triangle highlights cooperation between states to build multiple interests from self-interest and at the same time the cooperation that has been built will create a security collective in the anarchy world which vulnerable to any threats (Randall Parish and Mark Peceny, 2002). The Kantian Triangle will maintain balanced relations between states and limit their ambitions at domestic and global levels. The relations will create reciprocity among states which will protect their security, freedom, and rights from any aggressive outsiders (Randall Parish and Mark Peceny, 2002).

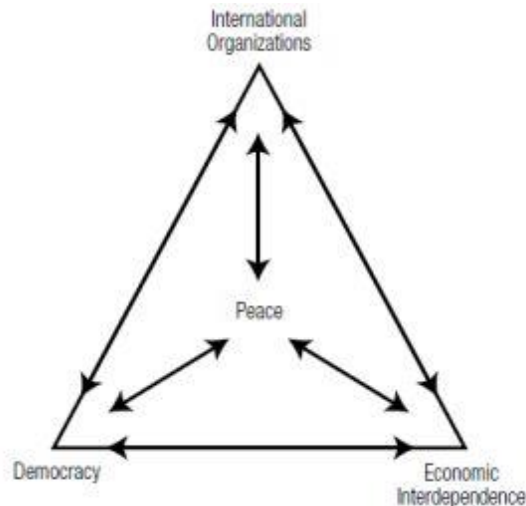


Figure 2 – The Kantian Triangle

Sources: (Diana Galeeva, 2018)

Democracy in the Kantian Triangle refers to the process of states respecting the law, norms, tolerance, and checks and balances in government institutions which prevent the democratic states from involving war (Bob Sugeng H, 2017.) The democratic system prioritizes peace in foreign policy to avoid long wars that create high risks and many losses to the nations. Avoiding war will gain a huge advantage for democratic states which creates maintenance of bilateral relations so that the interactions will not threaten each other.

Economic interdependence in the Kantian Triangle refers to the cooperation between states that brings priority to suppress and avoid conflict by engaging in economic activities (Bob Sugeng H, 2017). In line with the democratic system values which permit free on the free flow of goods and services, it fosters mutually profitable trade between states broader trade, and cross-border networks that create financial power together (Randall Parish and Mark Peceny, 2002). The interdependence will increase many resources between states and become protection in a dangerous world.

International organizations in the Kantian Triangle refer to their role as a platform for the conversion of self-interest to common interest which reaffirms members the importance of cooperation (Bob Sugeng H, 2017). International organizations can mitigate security dilemmas in the anarchy of the international system, where the states are equally committed to building peace and prosperity through agreement and observance of the law (Randall Parish and Mark Peceny, 2002). Under the international organization, democratic states are effective in keeping peace among their members.

The main idea of the Kantian Triangle is democratic peace which is how the states develop and build peace in the anarchy of international politics through three components democracy, economic interdependence, and international organizations. The republican system is believed to prevent a war in which every important decision of states must be discussed in public and mostly they will not agree to involve war (Bob Sugeng H, 2017).

Moreover, engagement in the economic field between democratic states will shift security threats into peace enforcement if there is a mutually threatening atmosphere. Highly Economic interdependence relationships tend to not fight between each other commercial partners, they will resist and prioritize peace above everything (G. Jhon Ikenberry, 2001). Furthermore, states' involvement in international organizations will limit other governments from using force against other members which is related to the commitment to a mutual non-aggression pact that establishes and operates under the law (Sid Simpson, 2019).

In the uncertain situation that is rooted in militarization of the outer space by great powers, the Kantian Triangle perspective has shown the ideas on how the small state's efforts to build peace and stability at national, regional, and global levels to implement three important components first establish or maintenance the democratic system where the government will formulation the foreign policy influence by public opinion which prevents the war and the same values of democracy will made the bilateral relations easy, second economic interdependence crucial and will consider advantage and losses which ties each other in peace rather than war and third international organization is platform for small states to promote justice, free, and open outer space from any domination and emphasize to comply to the international law.

4. Conclusion

The twenty-first-century era has developed more advanced technology in and out of Earth, including in the outer space dimension. Advanced technology has been able to increase outer space's role for modern countries around the world and the current attention issue is the militarization of outer space. A number of countries called great powers with capability have paid attention to potential space from decades ago and now they have access to and dominate the dimension for various interests.

Security has become one of the issues that evolved with technology, where define policy of countries tends to involve technology-based weapons. Great powers such as the United States, Russia, and The People's Republic of China (PRC) as an example from decades ago have been developed and involved in technology in the defense field in the outer space dimension. Therefore, various interests and ambitions from great power to militarization the outer space create tension and uncertainty.

The opportunity from advanced technology in defense fields that has been developed by great powers on the other side creates challenges for small states that lack technology capability which they still struggle to fulfill the defense needs in outer space. Therefore, arise concerns on how small states can play roles to maintain peace and stability in the uncertain twenty-first century of militarization of outer space which will be answered using the international relations perspective namely the Kantian Triangle.

The Kantian Triangle perspective emphasizes the use of three important components democracy, economic interdependence, and international organization if states want to build peace and prevent conflict in the anarchy system of international politics. The three components become a guide pattern for small states' efforts in formulating domestic and foreign policy in facing challenges and uncertain militarization of outer space in the twenty-first-century era.

Democratic governance plays an important role in shaping responses to outer space militarization. Economic interdependence provides opportunities for collaboration and broader cooperation in other fields including defense which helps face challenges from outer space militarization that occur. The international organization is the melting point between great powers and small states that engage in agreements, treaties, and diplomatic forums which create a collective will and commitment to preventing outer space from becoming a new domain of warfare.

The Kantian Triangle perspective has become one of the international relations theories for understanding the complex and dynamics of international politics and becomes an alternative to small state's efforts to look to the future to continue exploring avenues for cooperation, ensuring the principles of democracy, economic interdependence, and international collaboration that contribute to a secure and sustainable outer space environment.

5. Funding

This study received no specific financial support.

6. Competing interests

The authors declare that they have no competing interests.

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