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The use of force and outer space:

The Draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (2014).

Master Final Thesis

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Abstract:

The incapacity of the existing international legal framework to prevent the weaponisation of outer space causes international peace and security to be at jeopardy. The increasing degradation of the space environment together with the identification of outer space as a key domain for national security purposes has prompted the appearance of various normative initiatives aimed to fill this legal vacuum. In order to prevent the transformation of outer space in a new theatre of operations and expand its normative power in outer space governance, the Popular Republic of China in conjunction with the Russian Federation released under the Conference on Disarmament the revised Draft PPWT. This paper attempts to analyse China's norm-setting initiative, having as added value the discernment of the limitations that it languishes and the weighting of the North Atlantic Treaty Organisation's options regarding this legal instrument.

Key words: China, outer space, normative power, PPWT, weaponisation.

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ABBREVIATIONS.

ABM: Antiballistic Missile.

ADRV: Advanced Debris Removal Vehicle.

ADR: Active Debris Removal.

AL-1: Aolong-1.

Art.: Article.

ASAT: Anti-Satellite Systems.

CASC: China Aerospace Science and Technology Corporation.

CASIC: China Aerospace Science and Industry Corporation.

CD: Conference on Disarmament.

DA: Direct-Ascent.

Draft PPWT: The Draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects.

EU: European Union.

ESA: European Space Agency.

GEO: Geostationary orbit.

GGE: Group of Governmental Experts.

ICBM: Intercontinental ballistic missile.

ICoC: International Code of Conduct for Outer Space Activities.

IR: International Relations.

LEO: Low Earth orbit.

MCI: Military-Civilian Integration.

NATO: North Atlantic Treaty Organisation.

NASA: National Aeronautics and Space Administration.

NFP: No First Placement of Weapons.

NGO: Non-Governmental Organisation.

OST: Outer Space Treaty.

PAROS: Prevention of an Arms Race in Outer Space.

PCA: Permanent Court of Arbitration.

PGS: Prompt Global Strike.

RPO: Rendezvous Proximity Operations.

SSA: Space Situational Awareness.

TCBM: Transparency and confidence-building measure.

UN: United Nations.

US: United States.

WMD: Weapons of Mass Destruction.

1. INTRODUCTION.

The economic and social development of mankind is closely connected with outer space and the deployment of space systems. Apart from being necessary for many civil purposes —for example, response to natural disasters, transportation, etc.—, from a purely military and defence standpoint, space systems offer real-time communication, precision navigation, intelligence gathering, surveillance, warning of missile assaults, and missile guidance[1].

The actor capable of dominating outer space gains a significant competitive improvement in terms of access to information and managing information flow[2]. For instance, the theatre of operations is much more transparent —attacks can be much more effective as the positions of the enemy troops are known —; command and control are much more precise and capable —grants the possibility to respond in near-real time to enemy actions—; and all contributes to a reduction on friendly casualties while increasing efficiency and efficacy[3]. Given the economic, military, and strategic importance of satellites, the insurance of their full operational capability has become the cornerstone of the debate around outer space security and an area of study in its own right.

In front of an outer space that is increasingly contested —because of the growing number of spacefaring nations prepared to develop and deploy counter-space capabilities—, congested —due to the cluttering of space debris— and a competitive strategic domain on itself —considering the rising participation of public and private actors in the space market—[4], the current reality of outer space governance resembles to the state of nature described by Thomas Hobbes. A state of nature where individuals seek to gain naturally limited resources and maintain their own security and self-preservation in this environment which is rife with distrust and conflict[5]. Besides, spacefaring nations have a common interest in exploiting the vast and diverse instrumental value that outer space offers.

Moreover, the lack of civil governance is latent and nations' appetite and competitiveness is only subjected to their own private unchecked judgements[6]. The previous analogy is sustained on the fact that first, as more States and non-governmental actors compete in space, they tend to do so on a self-interested basis; second, these interests are largely unchecked by a defined governance or rule of law system capable of arbitrating and

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[1] TRONCHETTI, F., HAO, L., "The 2014 updated Draft PPWT: Hitting the spot or missing the mark?", *Space Policy*, Vol. 33, 2015, pp. 38-49, p. 38.

[2] CHENG, D., "Chinese Concepts of Space Security: Under the New Circumstances", pp. 527-551, p. 549 found in SCHROGL, K-U., *Handbook of Space Security: Policies, Applications and Programs*, Switzerland, 2ª ed., Springer, 2020.

[3] CHENG, D., *op. cit.*, footnote 2, p. 549.

[4] PRAˇZA´K, J., "Dual-use conundrum: Towards the weaponization of outer space?", *Acta Astronautica*, Vol. 187, 2021, pp. 397–405, p. 397.

[5] LIGOR, D., MCCLINTOCK, B., "Nasty, brutish, and short—the Future of Space Operations in the Absence of the Rule of Law: Addressing Congestion, Contestation, and Competitiveness", *NATO Legal Gazette*, Vol. 42, 2021, pp. 53-67, p. 54.

[6] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 54.

settling dispute or ensuring a fair and equitable distribution of resources among actors; and last, it does not exist "a Leviathan to which autonomous nations relinquish a certain measure of their sovereign decision-making authority in exchange for the assurance of security for the entire international community"[7].

The five-treaty regime, the United Nations' general principles and the soft law legal instruments compose an extensive but insufficient international regime to meet existing and forthcoming challenges. Space weapons are one of the most severe threats to peaceful exploration and use of space due to their disruptive effect and potential destructive harm to the benign space environment. As the foundation on which the current regime is built —the Outer Space Treaty (1967)— only forbids certain categories of space weapons, the current legal regime is unable to prevent the weaponisation of outer space and is fraught with loopholes.

Amid this scenario, the Popular Republic of China is emerging as a very important spacefaring nation. Moreover, it has identified space as a key domain so as to accomplish its "great power ambitions and challenge for supremacy"[8]. In recent years, its technological advancements in the space sector —but above all in the military sphere— have been exponential, although it seems that these achievements are no longer enough for the Popular Republic of China. The recent shift denotes that China is increasingly interested in actively participating on international rule-making activities and specifically, on playing the role of rule-maker on the maintenance of peace in the outer space[9]. Any State that wants to assume the role of rule-maker in preserving the peace in outer space and making the best use of it must face the challenges of "collective action and strategic assurance"[10]. Henceforward, it seems more than appropriate to analyse the most ambitious Chinese normative initiative to date —the Draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (2014), hereafter the Draft PPWT— so as to witness if it is capable of giving a response to the mentioned challenges and establish the Popular Republic of China as an internationally recognized normative power.

The Draft PPWT has been poorly received by the international community —being especially vocal in its criticism the United States— and thus, the primary objective of this paper is to analyse the legal instrument and secondarily, to discern the limitations that it languishes. The added value of this paper resides in the exhaustive analysis of the legal provisions that compose the Draft PPWT and on the subsequent explanation of its limitations. However, that is not all. Given the North Atlantic Treaty Organisation's (NATO) numerous interests in the outer space domain, it seems more than appropriate to contemplate how the normative power of the Popular Republic of China in outer space, and more specifically the Draft PPWT initiative, affect the Alliance's space policy and the options it should consider in this regard.

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[7] Ibid., p. 55.

[8] HILBORNE, M., "China's space programme: A rising star, a rising challenge", *Lau China Institute Policy Series*, Vol. 2., 2020, pp. 3-9, p. 9.

[9] BIN, L., "China's Policy and Rule-Making Activities on Outer Space: The Case of Preventing Arms Race from the Global Commons Perspective", *International Community Law Review*, Vol. 22, 2020, pp. 589–612, pp.589-590.

[10] BIN, L., *op. cit.*, footnote 9, p. 590.

In order to address the subsequent objectives, the applied methodology has consisted of the examination of the Draft PPWT, of documents published by the Popular Republic of China's Government —i.e. White Papers, etc.—, of documents and declarations published by the North Atlantic Treaty Organisation, of documents and resolutions of United Nations bodies and last, by stimulating articles emanating from the doctrine. The ambitious objectives that this paper had set out to meet were the following. First, it aimed to contextualise the Popular Republic of China and the Draft PPWT. Second, it intended to analyse the Draft PPWT from a legal perspective. Third, it attempted to explain and argue on the limitations it suffers from. Finally, the paper was focused on discussing the possible courses of action that the Alliance has at hand.

All of them were integrated into the six sections that comprise this paper. The first Section is this brief introduction, which aims to give an overall overview of the content that is going to be treated. The second Section is the contextualization of the Popular Republic of China and consequently, of the Draft PPWT. With that purpose, China's space doctrine, space programme's feats and ambitions will be discussed among other topics, all of them directed to help the reader to acquire a fully informed view on the Popular Republic of China's overall strategic interests. The third Section is devoted to the analysis of the Draft PPWT, which is preceded by a thorough description of the existing legal framework. So as to facilitate its comprehension, the analysis has been divided into differentiated blocks —preamble, definitions, substantial dispositions and procedural dispositions—. The fourth Section is oriented towards the explanation of the identified limitations and the provision of arguments behind the criticisms done to the Draft PPWT as well as the motivations of the co-sponsors. The fifth Section is focused on promoting a dialectical exercise bearing in mind the North Atlantic Treaty Organisation's tenants and the three differentiated courses of action that can be pursued in respect of the Draft PPWT. Last, the sixth Section summarises the main findings of the previous segments of the paper and provides some general reflections on outer space governance and its weaponisation.

All of this together has enabled the present project to conclude and clarify that the core disagreement over substantive space obligations and arms control is per se, what is hindering progress towards the prevention of outer space weaponisation. Whether it is pursued through soft law —transparency and confidence-building measures— or hard law solutions —like the Draft PPWT— the panacea would be to achieve durable cooperation on international peace and security. Unfortunately, it has been determined that the Popular Republic of China has failed resoundingly in generating this cooperative climate through its norm-setting efforts.

The Chinese limited approach towards outer space governance is just indicative of the big problem, the overall absence of political will and consensus among the members of the international community. The Draft PPWT is evidence of the still rampant realist theories by not attempting to safeguard the global commons dimension of outer space and allocating instead its co-sponsors national strategies in a predominant position[11].

[11] BIN L., *op. cit.*, footnote 9, p. 594.

Therefore, until a change in the outdated system occurs, outer space governance is foretold to come to pass as a "drama of the tragedy of the commons"[12].

[12] FREEMAN, C. P., "An Uncommon Approach to the Global Commons: Interpreting China's Divergent Positions on Maritime and Outer Space Governance", *The China Quarterly*, Vol. 241, 2020, pp. 1- 21, p. 16.

2. THE POPULAR REPUBLIC OF CHINA'S RISING SPACE ACTIVITIES AND ITS INTERNATIONAL RAMIFICATIONS.

It was thought advisable to provide the reader with some context about the actor and its space activities before diving into the analysis, thus enabling the reader to approach Section three with a fully informed view of how the Draft PPWT may advance China's strategic interests. For this purpose, the areas that are going to be treated are: China's space doctrine, China's space programme's feats, China's ambitions: the commercial space industry and international space governance forums, beyond China's narrative and some concluding remarks.

2.1. The Popular Republic of China's space doctrine.

The Popular Republic of China, due to the efforts made to build, launch and operate satellites in low Earth and geosynchronous orbits from the 1980s, is in 2022 "a complete space power with autonomous access to outer space and to deep-space exploration"[13]. China, despite lagging behind in what comes to technology and means, "is no longer an outsider, but an actual challenger to the great powers in space, including the United States"[14].

China's space doctrine is founded on national development, military empowerment, and great-power competition. From these three pillars, the former two drove China's space programme from its dawn while the latter has been increasing in its relevance in the last few decades[15]. The twofold argument that "space activities are to be used to both enhance national security and military capability and to contribute to the peace of the whole of mankind" is part of the narrative surrounding China's rising power, although not unique to the area of space —navy build-up and cyber capacity development also conform it—[16]. Indeed, this rhetorical effort was named *peaceful rise* under Hu Jintao's presidency, aiming to dissuade the fears that China's rise could stir in other States and specially in the space domain[17] due to its fundamental characteristic, its ambiguity[18]. Ambiguity emanates from the fact that a satellite used for one objective could be indistinguishable from one used for the other, or indeed assigned with both functions[19]. This feature cannot be ignored when designing a space doctrine. As Mark Hilborne wisely affirms "gaining a clear picture of how a potential opponent is configured in space, and what intentions underpin those configurations, is fraught with uncertainty. This is amplified by the difficulty in attribution in space given its remoteness, and the hazy regulations of what is permissible in space. Space, then, in many respects is a natural grey zone"[20].

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[13] JULIENNE, M., "China's Ambitions in Space: The Sky's the Limit", *Études de l'Ifri*, 2021, pp. 5-40, p. 5.
[14] JULIENNE, M., *op. cit.*, footnote 13, p. 5.
[15] Ibid., p. 5.
[16] Ibid., p. 14.
[17] Ibid., p. 14.
[18] HILBORNE, M., *op. cit.*, footnote 8, p. 6.
[19] HILBORNE, M., *op. cit.*, footnote 8, p. 7.
[20] Ibid., p. 7.

These peaceful ambitions, despite being presented as beneficial for all humanity, also conceal a darker side. Secrecy could be said to be the main adjective to describe Chinese military activities in outer space, which even if they are not covered in its White papers, its existence is not denied either. The Popular Republic of China owns a vast number of space military programs, for instance "intelligence satellites, an early-warning constellation, and several counter-space technologies"[21]. Concerning the latter, "China is working on different destructive and non-destructive approaches, such as kinetic anti-satellite interceptors, electronic warfare, cyber warfare, directed energy, and co-orbital operations"[22].

From Chinese official statements, concretely from President Xi Jinping declarations, it can be inferred that China aspires to eclipse the United States as the world's major space power by 2049[23]. The concept of "key point is space dominance" consequently highlights the relevance of "securing space dominance, through the comprehensive application of various types of tactics and forces, in a variety of ways, including interference, obstruction, disruption, and destruction of enemy space-related systems (including terrestrial facilities and data links)"[24]. Arguably, the vision expressed by the Chinese government's latest White Paper on space activities —published in 2022— consist on "strengthening its space presence in an all-round manner": "to enhance its capacity to better understand, freely access, efficiently use, and effectively manage space; to defend national security, lead self-reliance and self-improvement efforts in science and technology, and promote high-quality economic and social development; to advocate sound and efficient governance of outer space, and pioneer human progress; and to make a positive contribution to China's socialist modernization and to peace and progress for all humanity"[25]. As it can be appreciated, all of them are laudable and praiseworthy objectives, although the order on which they are enumerated reveals by itself Chinese intentions —economic and national security interests go first while altruistic objectives are released to a secondary role—.

2.2. The Popular Republic of China's space programme's feats.

The space domain has been "host to remarkable progress, and indeed expansion in recent years, across the military, commercial and civilian sectors"[26]. Nevertheless, the Chinese space programme has drawn attention amongst international achievements by exhibiting within the last two years advances that eclipse many nations' entire accomplishments in space[27].

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[21] JULIENNE, M., *op. cit.*, footnote 13, p. 15.

[22] Ibid., p.15.

[23] DROZHASHCHIKH, E., "China's National Space Program and the "China Dream"", *Astropolitics*, Vol. 16, 2018, No. 3, pp. 175-186, p. 176.

[24] CHENG, D., *op. cit.*, footnote 2, p. 535.

[25] The State Council Information Office of the People's Republic of China. *China's Space Program: A 2021 Perspective* [online]. 2022, January 28, pp.1-22, p.2. Available in: <http://www.china.org.cn/china/2022-01/28/content_78016843.htm> (Accessed 22 March 2022).

[26] HILBORNE, M., *op. cit.*, footnote 8, p. 5.

[27] Ibid., p. 5.

Despite having been fairly isolated in its space ambitions —in comparison to the United States and National Aeronautics and Space Administration (NASA)—, the Popular Republic of China has reached a level of sophistication that enables it to carry out alternatives for the ambitious space initiatives that Washington has generally led —and that other States have participated in—[28]. For instance, in three to five years the International Space Station could be decommissioned while the Chinese space station with its modular design has the potential to be expanded —and to be used as a soft power tool—[29]. Among others, is worth mentioning the Chang'e 5 mission which is "the latest phase in China's Lunar Exploration Program and was its first to collect and return samples of the lunar surface"[30]. Its predecessor, the Chang'e 4, completed "mankind's first landing on the far side of the moon in January 2019", which marked the second Chinese lunar landing[31]. In 2020, the BeiDou Navigation Satellite Systems' final satellite was launched into orbit fulfilling "the needs of the country's national security and economic and social development —by providing all-time, all-weather and high-accuracy positioning, navigation and timing services to global users"[32]. Many of China's satellites are dual-purpose —supporting urban planners and agricultural programs as well as the military— even though they have been slightly more focused on "providing suitable information to support Chinese economic development objectives than necessarily producing cutting-edge capability"[33].

Regarding other former China's space programme's feats, in 2003 it became the third country to launch a human into space[34] and 2007 successful anti-satellite systems (ASAT) test against a "Chinese weather satellite 500 miles above the earth"[35] inaugurated "a new era of weapon development"[36]. From 2016 to December 2021, "207 launch missions were completed —including 183 by the Long March carrier rocket series— and the total launch attempts exceeded 400"[37]. By 2016, the Popular Republic of China had already "launched Aolong-1 (AL-1) small satellite, also known as the Advanced Debris Removal Vehicle (ADRV) that reportedly utilised robotic arm for the removal of space debris" —constituting thus advanced debris removal technology—[38]. Same technology was deployed in late January 2022, as a "Chinese satellite was spotted grabbing another long-

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[28] CURCIO, B., "Interview from the Center for Innovation, Trade, and Strategy: Developments in China's Commercial Space Sector", *The National Bureau of Asian Research* [online], 2021. Available in: <https://www.nbr.org/publication/developments-in-chinas-commercial-space-sector/> (Accessed 5 May 2022).

[29] CURCIO, B., *op. cit.*, footnote 28.

[30] HILBORNE, M., *op. cit.*, footnote 8, p. 5.

[31] Ibid., p. 5.

[32] China Satellite Navigation Office. *Development of the BeiDou Navigation Satellite System (Version 3.0)* [online]. December 2018. Available in: <http://www.beidou.gov.cn/xt/gfxz/201812/P020190117356387956569.pdf> (Accessed 22 March 2022)

[33] CHENG, D., *op. cit.*, footnote 2, p. 532.

[34] BIN, L., *op. cit.*, footnote 9, p. 591

[35] FREEMAN, C. P., *op. cit.*, footnote 12, p. 7.

[36] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 398.

[37] The State Council Information Office of the People's Republic of China, *op. cit.*, footnote 25.

[38] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 401.

dead satellite and days later throwing it into a "graveyard" orbit 300 km away, where objects are less likely to hit spacecraft"[39].

The mentioned events are some of the most newsworthy incidents of China's development of space capabilities. Nonetheless, there exists another aspect of China's space programme which although it is extremely important, it has been largely disregarded. The ground-based segment, comprising "radars and communications facilities that enable the operation of satellites, the receiving and disseminating of the data the satellites collect, and the generating of space situational awareness (SSA) or space domain awareness" is less popular even though it is expanding at full speed[40].

2.3. The Popular Republic of China's ambitions: the commercial space industry and international space governance forums.

Despite mentioning objectives as pioneering human progress in its White Paper, China also has more mundane objectives in mind. Concretely, the expansion of its commercial space industry and international space governance forums have been identified as key areas for Chinese agency.

The Chinese space sector has seen an increase in the number of private space actors during the last five years which is "in stark contrast with the situation prior to 2015, where China's aerospace industry was mainly dominated by two companies, the China Aerospace Science and Technology Corporation (CASC) and the China Aerospace Science and Industry Corporation (CASIC)"[41]. The evolution of the Chinese space industry is inextricably linked to China's civil-military integration policy and its far-reaching impacts. If the Chinese government identifies that the development of certain spatial technologies might be beneficial, the designed strategy will dictate the compass of the commercial space sector in terms of research and development[42]. Furthermore, as the Military-Civil Fusion is conceived as a policy objective on itself, industrial bases are built to support spatial technologies. Hence, a start-up that supports China's geopolitical and technological aspirations will have more money and resources accessible[43]. Despite the high dynamism of the preceding years, Chinese commercial space industry remains very different from the United States' New Space ecosystem, being this a compelling reason for its support and expansion[44].

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[39] PARDO, E., "Chinese 'space cleaner' spotted grabbing and throwing away old satellite", *DW* [online], 2022. Available in: <https://www.dw.com/en/chinese-space-cleaner-spotted-grabbing-and-throwing-away-old-satellite/a-60658574> (Accessed 6 March 2022).

[40] HILBORNE, M., *op. cit.*, footnote 8, p. 6.

[41] LU, Z., "Chinese Space and Security Policy: An Overview", pp. 515-525, p. 516 found in SCHROGL, K-U., *Handbook of Space Security: Policies, Applications and Programs*, Switzerland, 2ª ed., Springer, 2020.

[42] CURCIO, B., *op. cit.*, footnote 28.

[43] CURCIO, B., *op. cit.*, footnote 28.

[44] JULIENNE, M., *op. cit.*, footnote 13, p. 26.

Moreover, although one of the main drivers of commercial space industry is national security —which outer space activities enable to enhance and at the same time limit United States' access to space via a range of counter-space capabilities—, Chinese development of space-based capabilities will assist it on gaining economic and diplomatic leverage by offering technical and scientific support to incipient foreign space programmes, "further challenging the US across the spectrum of national power"[45].

The Popular Republic of China is becoming steadily more active in international space governance forums[46]. Chinese doctrine does not contemplate warfare just as a "military battle" but as a comprehensive struggle where "politics, economy, diplomacy, and law" are tightly entangled[47]. Therefore, China prefers to resort to lawfare as an "active defence" strategy to be applied previously to an "actual conflict and across the spectrum of human activity"[48]. Certainly, the Chinese approach towards existing legal international regimes —"whether legal revisionism and assertive actions or fundamental support"— will vary according to how that specific regime affects national interests[49]. Thus, this flexibility should be acknowledged when assessing Chinese behaviour so as to prevent "blanket characterizations of China as revisionist vis à vis current global rules and norms"[50]. Still, now that the Popular Republic of China is an internationally recognised space power, it seeks to use international space legislation to its advantage, whilst the United States "seems to have given up this path and gone on its own unilateral way"[51].

When a rising State's Government has a greater sense of responsibility than the dominant State, such disparity is manifest in the former's attempts to propose more reforms than the latter, which will gradually reduce the capability disparity between them[52]. On condition this tendency persists, on Bret M. White's words "the rising State's comprehensive capability will catch up with or even surpass that of the dominant State"[53]. Almost every year in the UN General Assembly, due to the joint action of China and Russia, resolutions on issues related to security in space are passed, concretely on: "International cooperation in the peaceful uses of outer space" (since 2000), the "Prevention of an arms race in outer space" (since 2000), and "Transparency and confidence building measures in outer space" (since 2005)[54].

However, these resolutions are not free from ideological connotations and "those who oppose the No First Placement of Weapons (NFT) resolutions object to the introduction of the Chinese concept of community of shared future for humankind", as it "reflects a conflicting vision of multilateralism and that should not be introduced into UN

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[45] HILBORNE, M., *op. cit.*, footnote 8, p. 8.

[46] JULIENNE, M., *op. cit.*, footnote 13, p. 6.

[47] BELLFLOWER, J. W., "The Influence of Law on Command of Space", *Air Force Law Review*, Vol. 65, 2010, pp. 107-144, p. 134.

[48] BELLFLOWER, J. W., *op. cit.*, footnote 47, p. 134.

[49] FREEMAN, C. P., *op. cit.*, footnote 12, p. 17.

[50] Ibid., p. 17.

[51] JULIENNE, M., *op. cit.*, footnote 13, p. 6.

[52] WHITE, B. A., "Reordering the Law for a China World Order: China's Legal Warfare Strategy in Outer Space and Cyberspace", *Journal of National Security Law & Policy*, Vol. 11, 2021, pp. 2-50, p. 50.

[53] WHITE, B. A., *op. cit.*, footnote 52, p. 50.

[54] Ibid., pp. 36-37.

resolutions"[55]. Inside this field of action, it can be located the ban on placing weapons in outer space, on which the Popular Republic of China and the Russian Federation are in conjunction pressuring the United States to sign a new treaty —the Draft PPWT— which the US as well as several Western States have opposed based on the arguments that will be later discussed[56]. All in all, by presenting their initiatives Beijing and Moscow aspire first, to enhance their soft power and portray themselves as normative powers in the eyes of the international community; and second, to take off the spotlight of opposing initiatives.

2.4. Beyond the Popular Republic of China's narrative.

There are two main —and opposing— narratives regarding the American and Chinese activities in outer space. On the one hand, the Popular Republic of China and the Russian Federation contend that the United States is maintaining the "strategic hegemony in outer space" and "threatening other powers in space and on the ground" while Washington alleges that "China and Russia are trying to hinder the American technological advantage" throughout the time that they are "catching up in the mastering of these technologies and stockpiling ground-based weapons"[57].

The first narrative aims to portray the United States "as a domineering space power" whilst China is depicted "as a peaceful actor committed to economic development and international cooperation with States regardless of political system and level of economic development"[58]. In 2015 White Paper on Military Strategy, Beijing ascribed the weaponisation of outer space to Washington and declared that "China will keep abreast of the dynamics of outer space, deal with security threats and challenges in that domain, and secure its space assets to serve its national economic and social development, and maintain outer space security"[59].

Concretely, according to Mark Hilborne "China views the competition between itself and the US as reflecting their wider relationship, and, as China seeks global power, space will be an important element of this course"[60]. Same opinion is shared by John W. Bellflower who claims that "China appears focused on an asymmetric strategy to deny its opponent use of [space] as much as possible"[61] and "has embraced asymmetric warfare at a level previously unimagined"[62]. Among those tactics China even justifies the development and

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[55] Ibid., pp. 37-38.
[56] Ibid., p. 6.
[57] JULIENNE, M., *op. cit.*, footnote 13, p. 6.
[58] HILBORNE, M., *op. cit.*, footnote 8, p. 8.
[59] The State Council Information Office of the People's Republic of China. *China's Military Strategy (full text)* [online]. May 2015. Available in: <http://english.www.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm> (Accessed 22 April 2022).
[60] HILBORNE, M., *op. cit.*, footnote 8, p. 8.
[61] BELLFLOWER, J. W., *op. cit*., footnote 47, p. 133.
[62] Ibid., p. 134.

deployment of capabilities to damage and interfere with American satellite systems in order to blind the United States' military in the event of conflict[63].

Even if this "zero sum game" approach is not the predominant mindset in China and it is inconsistent with the official tenets of peaceful and cooperative use of outer space, it is in accordance with "the explicit ambition to become a dominant power in space"[64]. Indeed, the Popular Republic of China has adopted a pragmatic stand towards space policy; when incapable of competing with the United States, Beijing opposes it and when Washington chooses to pursue its own route in terms of space legislation, China takes a "wait-and-see and interested attitude"[65].

2.5. Conclusions on the Popular Republic of China's space activities international ramifications.

The Popular Republic of China is an actual challenger to the great powers in space and has identified space as a key domain so as to accomplish its great power ambitions and challenge for supremacy[66].

Despite its efforts to persuade the world of its peaceful rise, China's military activities in space are well known and the Draft PPWT barely poses restraints on them. Beijing makes profit of its space achievements as "a benchmark of prestige and power on the international stage"[67] and thus, they are committed to its development, "maintaining consistent focus and investment"[68]. Same determination seems to have regarding the expansion of the Chinese commercial space industry and its civil-military integration policy. Moreover, rather than becoming increasingly rare, Chinese participation in international space governance forums will become increasingly widespread as it plays a key role in portraying China as a normative power and benevolent actor. Thus, the presentation of the Draft PPWT along with boosting recurrent resolutions on outer space non-weaponisation in the framework of the Conference on Disarmament (CD) will be part of the strategy.

Finally, the true aims behind the "committed peaceful actor" narrative would be summarised on the execution of an asymmetric strategy to deny its opponent use of space as much as possible and a "wait-and-see and interested attitude"[69]. The increasing tensions between the Popular Republic of China and the United States will generate an escalation on the relevance of space in the present decade —and of its governance—. Outer space, apart from being the ideal domain for gaining on international prestige and reinforcing national pride, it also constitutes "a strategic field where Beijing needs to fill

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[63] KITTRIE, O. F., *Lawfare: Law as a Weapon of War*, New York, Oxford University Press, 2016, p. 169.
[64] JULIENNE, M., *op. cit.*, footnote 13, p. 39.
[65] Ibid., p. 38.
[66] HILBORNE, M., *op. cit.*, footnote 8, p. 9.
[67] JULIENNE, M., *op. cit.*, footnote 13, p. 14.
[68] HILBORNE, M., *op. cit.*, footnote 8, p. 9.
[69] JULIENNE, M., *op. cit.*, footnote 13, p. 38.

the technological gap with the US, and where it is searching for US vulnerabilities"[70]. Therefore, if any advantage can be gained through norm-setting initiatives, the Popular Republic of China will determinately pursue it.

[70] Ibid., p. 40.

3. THE DRAFT TREATY ON THE PREVENTION OF THE PLACEMENT OF WEAPONS IN OUTER SPACE, THE THREAT OR USE OF FORCE AGAINST OUTER SPACE OBJECTS.

This Section provides a closer look at the Draft PPWT (See its content in ANEX 1). To this end, it has been thought that it would be useful to initially provide some detailed context about the legal framework on which this draft is grounded. Additionally, to facilitate the understanding of the analysis, the Draft PPWT has been divided into three blocks, the preamble and the definitions, the substantive provisions and the procedural provisions. As in all Sections, the main findings are summarised at the end.

3.1. Beyond the current legal framework.

Current international space law is a functional categorisation of public International Law and domestic law relating to activities taking place in the outer space[71]. Firstly, these actions must comply with the international regime on outer space, which is composed of five international Treaties and numerous UN General Assembly resolutions. The fundamental documents are the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (1967), the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (1968), the Convention on International Liability for Damage Caused by Space Objects (1972), the Convention on Registration of Objects Launched into Outer Space (1975), the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (1979)[72]. Among these legal documents, the Popular Republic of China has signed the 1967 Treaty, accessed the 1968 Agreement, the 1972 Convention and the 1975 Convention, having left aside the 1979 Agreement on the Moon and Other Celestial Bodies.

Secondly, the activities in question need also to comply with the UN general principles, some of which —but not all— constitute to customary international law[73]: Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space; Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting; Principles Relating to Remote Sensing of the Earth From Outer Space; Principles Relevant to the Use of Nuclear Power Sources in Outer Space; Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries[74].

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[71] MONTES TOSCANO, B., MUNOZ MOSQUERA, A., "Space domain, autonomous warfare and hybrid environments: The next challenges for NATO", *NATO Legal Gazette*, Vol. 42, 2021, pp. 1-18, p.2.

[72] UN Office for Outer Space. *Space Law Treaties and Principles* [online]. Available in: <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html>. (Accessed 25 February 2022).

[73] MONTES TOSCANO, B., MUNOZ MOSQUERA, A., *op. cit.*, footnote 71, p. 2.

[74] UN Office for Outer Space, *op. cit.*, footnote 72.

Thirdly, States also need to comply with "a myriad of national laws and regulations, as well as decisions taken by international organisations with space-related activities"[75]. In addition, there exist "applicable" soft law instruments —i.e. recommendations, guidelines, codes of conduct, etc.— which have been critical to advance different initiatives at intergovernmental and non-governmental organisation (NGO) levels[76].

The complex network conformed by hard-law and soft-law instruments, the outer space legal framework and the treaty-based principle that all States have the right to freely have access to outer space and thus to explore it and use it; provides fantastic prospects for human advancement, but it is also a source of controversy among the many players capable of and willing to engage in extra-terrestrial operations[77]. Furthermore, it is also an open door for those who are capable and willing to impose practices that benefit their own interests. Unfortunately, "outer space legal framework does not and will not escape the strategic positioning of non-law-abiding actor"[78].

Additionally, while International Law establishes a normative framework pivoting around outer space's global common nature; States' space policies on their part, place a higher value on security and defence strategies as well as on the commercial rewards derived from extra-terrestrial exploitation[79]. Indeed, "national space policies, as reflected by the practises of space powers, play a more essential role than space legislation for strategic reasons such as national security and defence"[80]. Therefore, it could be concluded that one of "the main obstacles for regulating on outer space is the widening gap between international space law and national space policies, which reflects the tension between cooperation and competition, or the gap between the normative framework of outer space as a global common and the reality of States practises of preserving their own security in and benefits from the use of outer space"[81].

Besides, the main limitation of the current legal framework is connected to security and mutual assurance. The prevention of an arms race in outer space (PAROS) is far from being achieved as the effect of Article IV of the Outer Space Treaty is quite limited due to the following reasons. First, the Article restricts the use of the Moon and other celestial bodies exclusively for peaceful purposes[82], thus, not applying to the whole outer space. Second, Article IV of the Outer Space Treaty fails to forbid "the stationing of any other type of weapons than nuclear and mass destruction weapons (WMD) in outer space — nuclear, radiological, biological, and chemical weapons, being other kinds of space weapons allowed"[83]— as well as "the use of outer space for military purposes in any other

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[75] MONTES TOSCANO, B., MUNOZ MOSQUERA, A., *op. cit.*, footnote 71, p. 2.
[76] Ibid., p. 3.
[77] Ibid., p. 3.
[78] Ibid., p. 3.
[79] BIN, L., *op. cit.*, footnote 9, p. 597.
[80] BIN, L., *op. cit.*, footnote 9, p. 596.
[81] Ibid., p. 590.
[82] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 19th December 1966. Available in: <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html> (Accessed 4 March 2022).
[83] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 402.

way"[84]. Third, the Outer Space Treaty blatantly fails to prohibit "the passage through outer void space on their way to their targets of land-to-land, sea-to-land or air-to-land ballistic missiles with nuclear warheads"[85]. Conceivably, "the most pressing threat to space objects is represented by direct ascent, hit-to-kill, ground-based ASATs which not only disintegrate the targeted satellite but also cause an unpredictable amount of space debris capable of undermining the long-term sustainability of outer space"[86]. To make matters worse, "any country able to launch a satellite or build a sounding rocket could develop these types of ASATs"[87]. Consequently, "a coherent and comprehensive legal framework governing military activities in outer space is currently missing"[88].

In front of this scenario, the Popular Republic of China and the Russian Federation attempted to provide a solution to the existing legal vacuum by presenting an initiative pursuing the non-weaponisation of outer space. The Draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects was put into operation by "a 2002 working paper that had been jointly submitted to the Conference on Disarmament by Russia, China, Indonesia, Belarus, Vietnam, Zimbabwe, and Syria, which confirmed the preference of those States to a hard law approach to the prevention of the weaponisation of outer space"[89]. The Chinese and Russian joint effort was further developed in "additional working papers presented to the Conference on Disarmament in 2006". On 28 February 2008 China and Russia jointly submitted the Draft PPWT to the Conference on Disarmament, thus finalising nearly a decade of efforts on the issue of PAROS"[90].

On 10 June 2014, China and Russia jointly submitted to the CD an updated draft of PPWT[91] —the Draft PPWT— which is still "an initiative of preliminary stage"[92]. By taking into consideration observations and suggestions received from interested spacefaring nations and reflecting the rapidly evolving situation in outer space, the revised Draft PPWT attempted to bring States' viewpoints closer together and address the vagueness or ambiguities noted in the previous version[93]. Among the modifications, the elimination of the definition of outer space; the simplification of certain definitions such as *outer space object*, *weapon in outer space*, *use of force*, and *threat of force*; the mention of the rights of individual and collective self-defence; the identification of the necessity for measures to verify compliance; and last, the establishment of a dispute resolution

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[84] BIN, L., *op. cit.*, footnote 9, p. 598.

[85] Ibid., p. 599.

[86] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 39.

[87] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 39.

[88] VON DER DUNK, F., TRONCHETTI, F., *Handbook of Space Law*, Edward Elgar (2015) p. 332, found in BIN, L., *op. cit.*, footnote 9, p. 599.

[89] HENDERSON, S., "Arms Control and Space Security", pp. 95-110, p. 102 found in SCHROGL, K-U., *Handbook of Space Security: Policies, Applications and Programs*, Switzerland, 2ª ed., Springer, 2020, p. 102.

[90] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 40.

[91] Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (Draft), 16th June 2014. Available in: <https://www.fmprc.gov.cn/mfa_eng/wjb_663304/zzjg_663340/jks_665232/kjfywj_665252/201406/t20140616_599726.html> (Accessed 25 February 2022).

[92] BIN, L., *op. cit.*, footnote 9, pp. 599-600.

[93] SU, J., "Space Arms Control: Lex Lata and Currently Active Proposals", *Asian Journal of International Law*, Vol. 7, 2017, pp. 61–93, p. 71.

mechanism[94]. However, these modifications were not enough to gain the approval of certain States, such as the United States, which resolved positioning itself against it and claiming that it "remains fundamentally flawed"[95].

The complex mix of outer space legal framework, "sometimes apparently "weak" but actually "fluid" and current non-kinetic trends collectively make this domain an "obscure object of desire" for legal use and misuse, which may lead to Lawfare activities"[96]. Henceforth, one of the secondary aims of the present work will be to deepen in the three main limitations that the Draft PPWT suffers, concretely, (1) its incapacity to address direct-ascent anti-satellite (ASAT) systems, (2) the non-provision of verification tools and (3) the major issue of space debris or long-term sustainability of outer space. After tackling those issues, reflections on whether the Draft PPWT succeeds at providing an effective solution to the increasing weaponisation of outer space and its overall added value will be provided.

3.2. The preamble and the definitions of the Draft PPWT.

3.2.1. The preamble.

The Preamble of the Draft PPWT draws attention to the compliance with the obligations laid down in the "multilateral agreements related to outer space" aspiring to generate growing levels of confidence in the "peaceful intentions of States"[97]. Nevertheless, it fails to provide certainty with respect to its scope and meaning.

It could be criticised that there is no allusion to the right to explore nor to the use of outer space for peaceful purposes, endangering a continuity with the language used in the Outer Space Treaty. Moreover, when one is familiar with the accusations suffered by the Draft PPWT on its potential interferences with the right of States to peacefully use outer space, the omission of a clause reaffirming this right comes for as a poor decision[98]. Despite the Chinese efforts to reiterate "its peaceful rise and the use of outer space for peaceful purposes", its rising space activities are "felt as disturbing rather than constructive in regard of outer space governance"[99]. This omission is outdated as in "China's Space Program: A 2021 Perspective" it is clearly stated that "China upholds the principle of exploration and utilisation of outer space for peaceful purposes"[100]. Hence, if an updated Draft PPWT were to be presented, it would be predictable that this incoherence would be corrected.

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[94] SU, J., *op. cit.*, footnote 93, p. 72.
[95] Ibid., p. 72.
[96] MONTES TOSCANO, B., MUNOZ MOSQUERA, A., *op. cit.*, footnote 71, p. 5.
[97] Treaty, *op. cit*., footnote 91, Preamble.
[98] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 42.
[99] BIN, L., *op. cit.*, footnote 9, p. 592.
[100] The State Council Information Office of the People's Republic of China, *op. cit.*, footnote 25.

In addition, the Preamble omits any mention of the pre-existing arms control and disarmament agreements in the area, being striking due to the significant impact on military activities in outer space that these agreements own —notably "in the development, deployment and testing of anti-satellite technology"— and the wide practice of other normative instruments —such as the "UNGA Resolutions on PAROS or the International Code of Conduct for Outer Space Activities (ICoC)"— on referring to other agreements on the matter[101].

In conclusion, in this Preamble the opportunity to convey a change of mindset which proposes an abandonment of "the narrow concept of national security and individual benefits" in the pursuit of a "re-conceptualized security and benefit from outer space activities in the spirit of common interests" is missed[102].

3.2.2. The definitions.

The Treaty begins with a list of definitions detailed in Article I of the Draft PPWT, among which is outstanding the omission of the concept corresponding to *outer space* —leaving therefore room for discussion—. Apparently, China has ceased to support its legal claims on "vertical sovereignty" —as 2008 draft contained a specific delimitation between national airspace and outer space— "for another opening for legal warfare on the PPWT"[103]. Instead of shaping the specific legal delimitation of sovereignty between national airspace and outer space, China has intended to portray itself as a leader in drafting a new comprehensive treaty. This could be explained on the assumption that "the use of ruses to game the system is part of the China Order mindset, avoiding change and adaptation in favour of reordering the surrounding environment"[104]. Therefore, it could be concluded that Beijing has noticed certain convenience in portraying itself as a global leader in outer space governance rather than to be persistent in its vertical sovereignty claim. Certainly, this shift in tactics may be described as legal warfare.

Furthermore, this emanates from the long-standing difficulty to delimitate between airspace and outer space. As space technologies continue to evolve at an abysmal pace, States are questioning whether and where a clear boundary between outer space and aerospace should be established —with particular attention to the development of aerospace objects and near-space vehicles—[105]. The *Kármán line* is "a common reference point" and there is "considerable state practice and opinio juris has developed assuming, firstly, a boundary would indeed be necessary, and secondly, that a 100 km altitude [...] would make most sense"[106]. In this regard, the United States has contended that it is too soon to establish such a boundary and has declared a "right of innocent passage for satellites stating that all States have the rights of passage through and operations in space without interference"[107]. This approach was strengthened by the lack of State objections

[101] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 42.
[102] BIN, L., *op. cit.*, footnote 9, p. 594.
[103] WHITE, B. A., *op. cit*., footnote 52, p. 25.
[104] WHITE, B. A., *op. cit.*, footnote 52, p. 25.
[105] SU, J., *op. cit.*, footnote 93, p. 72.
[106] Ibid., pp. 23-24.
[107] Ibid., p. 24.

in respect of the "overflight of satellites above their territorial airspace at the dawn of the space age"[108].

Nevertheless, the absence of a legal solution regarding space delimitation is explained by Frank von der Dunk and Fabio Tronchetti as "outer space is a global common, where freedom to operate is the baseline rule and restrictions to that freedom can only arise under jus cogens, international treaties or customary international law"[109]. In addition, providing a definition for this term could be counterproductive to the Draft PPWT's overall goal since the deployment of space weapons below the 100 kilometres would be allowed if so[110].

Firstly, the definition of the term *outer space object* is provided, being applicable to any device, that is "placed in outer space and designed for operating therein"[111]. Thus, outer space objects to be considered as such must satisfy both, the spatial —placed in outer space— and functional criteria —designed to function in outer space—[112].

Secondly, the term *weapons in outer space* clarifies that only those objects that intend to "eliminate, damage or disrupt normal functioning of objects in outer space, on the Earth's surface or in the air [...]" shall be identified as weapons[113]. The key element for an object to be considered a weapon in outer space is its "production and conversion" for hostile purposes or use and it applies to any device, irrespectively of its nature —civil or military—[114]. Hence, dual-use objects —"[...] a technology, that has both military utility and sufficient commercial potential to support a viable industrial base"[115]— could be encompassed under this definition. This is very practical as "due to the dual-use nature of many space technologies, even benign space capabilities can be viewed by others as counter-space weapons"[116]*;* but also because "space hybrid operations conducted in the "grey zone" spectrum constitute a potential threat and are often based on dual-use capabilities"[117].

Therefore, while the provided definition forbids the deployment of any space item developed or modified for hostile purposes, it does not prevent the testing, deployment, and employment of space objects for active debris removal (ADR) and near-Earth object diversion —which may readily be employed as weapons—[118]. Particularly, "it is fundamental to highlight the dual-use capabilities involving rendezvous proximity operations (RPO) and active debris removal system (ADR)"[119]. ADR systems are "a good example of how space assets can be utilised for both benign and aggressive actions. These

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[108] BELLFLOWER, J. W., *op. cit*., footnote 47, p. 138.
[109] DUNK, F., TRONCHETTI, F., *The Handbook of Space Law*, eds., 2015 found in WHITE, B. A., *op. cit.*, footnote 52, p. 23.
[110] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 43.
[111] Treaty, *op. cit*., footnote 91, Article 1.
[112] SU, J., *op. cit.*, footnote 93, p. 73.
[113] Treaty, *op. cit*., footnote 91, Article 1.
[114] SU, J., *op. cit.*, footnote 93, p. 73.
[115] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 398.
[116] Ibid., p. 399.
[117] Ibid., p. 399.
[118] HENDERSON, S., *op. cit.*, footnote 89, p. 104.
[119] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 399.

systems are purposed to remove a dysfunctional space object by using another spacecraft. That, however, means that they can also be used for removal of, or interference with, a functional system. Authors argue that ADR systems have many things in common with RPO and can be exploited for offensive purposes"[120].

Still, it corroborates the restrictive approach adopted by Chinese and Russian drafters regarding the concept of outer space weapons[121]. Indeed, by tackling the definition assignment with such perspective and suggesting restrictive definitions, the Draft PPWT increases its prospects of being discredited, even more if the past ground-based ASAT technology testing —which has been occurring since 2007— is raised to the ground during the debate. The exclusion in such definition of "all the ground-based systems, including direct-ascent (DA) ASAT weapons" —"thus justifying their further development"— comes as a poor decision[122]. Besides, the most appropriate definition would be that including, apart from the "offensive devices" placed in outer space, those "ground-based devices" competent enough for assaulting space objects.

Thirdly, the elaborated definition of the term *placed in outer space* constitutes the spatial criteria, being this fulfilled "when it orbits the Earth at least once, or follows a section of such an orbit before leaving this orbit, or is placed at any location in outer space or on any celestial bodies other than the Earth"[123]. Additionally, providing that space-based ASAT systems or missile defence systems "orbits the Earth at least once, or follows a section of such an orbit before leaving this orbit" they would be partially included in such a definition[124]. However, on Jinyuan Su's opinion, "Prompt Global Strike (PGS) systems and suborbital flights for point-to-point transportation [...] do not fall within the scope of outer space objects as defined by the 2014 PPWT, because they do not fulfil the functional criterion of being designed for operation in outer space"[125]. Arguably, according to this interpretation a reusable spacecraft or space-based ASAT systems would fall under the scope of the term *outer space object*.

Fourthly, the term *use of force* is described as "any intended action to inflict damage to outer space object under the jurisdiction and/or control of other States" —this is, objects belonging and/or operated by other States— while the concept *threat of force* is a "clearly expressed in written, oral or any other form intention of such action"[126]. Moreover, paragraph (d) stipulates that when it exists an agreement between two States, any action taken by one of the parties to the agreement aimed at detaining the "uncontrolled flight of a space object under the jurisdiction" of the other party, and upon request, shall not be considered a threat nor a use of force[127]. Therefore, the definition of *use of force* and *threat of force* should be interpreted as an undoubtedly stated forethought to launch a hostile action against a space object belonging to another country. Arguably, this is inadequate as it remains uncertain whether undertaking ASAT tests in outer space or the

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[120] Ibid., p. 399.
[121] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 44.
[122] PRAˇZÁK, J., *op. cit.*, footnote 4, p. 399.
[123] Treaty, *op. cit*., footnote 91, Article 1.
[124] JAKHU, R. S., DEMPSEY, P. S., *Routledge Handbook of Space Law*, New York, Taylor & Francis Group, 2017, p. 211.
[125] SU, J., *op. cit.*, footnote 93, p. 73.
[126] Treaty, *op. cit*., footnote 91, Article I.
[127] Ibid., Article I.

positioning of "offensive devices on the ground" could be encompassed under these definitions.

The provided definitions of *use of force* and *threat of force* entail certain complexity as they are "embedded in the divergent approaches to the prevention of arms race in outer space"[128]. Even though these definitions aim at shedding light on the interpretation of Article 2(4) of the UN Charter in the context of outer space, the fact that they "emphasise the intention of the conduct" —as denoted by the expression "any action intended to [...]"—, overlooking "the threshold of seriousness below which a use of force" is not comprehended by Art. 2(4) prohibitions' are fraught with uncertainty as "how the intention of the actors can be discerned" may still constitute an intricated issue in practice[129].

For instance, the consequences of examining "the subjective rather than the objective or physic factor of the conduct" are that "temporary or reversible effects —such as temporary malfunction or dysfunction— of the space object caused by non-intentional operation do not constitute the use of force or threat of force" while "any intentional operation causing temporary or reversible effects will amount to use of force, no matter the degree of gravity or seriousness of such operation"[130]. Clearly, this can foretell the inefficiency of the Draft PPWT and consequently, the Draft PPWT fails to benefit from "the opportunity of developing the current International Law on the military use of outer space by providing concrete indications on the character, gravity and scale of the conduct"[131].

3.3. Substantive dispositions.

3.3.1. Obligations of the Parties (Art. II).

Article II of the Draft PPWT establishes four main prohibitions, being ingenious in its wording —as it avoids reiteration and is clearer—, in preventing Parties from engaging through international cooperation in actions "inconsistent with the subject matter and the purpose of this Treaty" and last, in precluding State Parties to "assist or incite other [...] international, intergovernmental and any non-governmental organisations, including non-governmental legal entities established, registered or located in the territory under their jurisdiction and/or control to participate in activities inconsistent with the subject matter and the purpose of this Treaty" —increasing its universality—[132].

The inclusion of a wider spectrum of stakeholders is a wise decision and acknowledges the prominent role that especially private entities represent in the space sector[133]. In fact,

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[128] BIN, L., *op. cit.*, footnote 9, p. 602.
[129] Ibid., p. 602.
[130] Ibid., p. 603.
[131] Ibid., p. 603.
[132] Treaty, *op. cit*., footnote 91, Article II.
[133] CASANOVAS, O., RODRIGO, A. J., *Compendio de Derecho Internacional Público*, Madrid, 10ª ed., Editorial Tecnos, 2021, p. 381.

the Draft PPWT precedes the "2016 Opinions" in which "Military-civilian integration (MCI) was promoted as China's national strategy" and where policymakers comprehended that "a crucial step to achieve the MCI targets in space was to facilitate the participation of the nongovernmental sector"[134].

Among current "space relations and peaceful uses of outer space" two differentiated trends can be noticed, "the recent development in space rivalry" —fuelled by the conflictual nature of major space powers— and the "emergence of New Space featured by growing commercialization of space sector"[135]. Furthermore, the Draft PPWT calls on the attention of State Parties to control the space activities of their nationals and reflects the underlying concerns when envisioning possible future scenarios where these actors are capable of threatening the security of space objects. Still, "the recent commercial space boom" has its advantages as it means "private companies are increasingly powerful players in the space domain and can leverage their brand, customers, and cheque books to support their values and the economic viability of the domain they operate in"[136]. Specially, if that "viability rests on the long-term sustainability of the space environment itself and minimising the costs and risks to commercial investment and space activities, which could be jeopardised by military activities such as debris-causing ASAT tests"[137].

Notwithstanding, Article II of the Draft PPWT endures an alarming problem of differentiation among States Parties and non-States Parties. The Article in question obliges the States Parties to this Treaty to "not resort to the threat or use of force against outer space objects of States Parties"[138]; thus, not forbidding the threat or use of force against outer space objects pertaining to non-State parties. In conclusion, if the Draft PPWT succeeds at becoming "binding International Law, it will override customary norms of non-interference and leave the space objects of non-parties open to interference, unless they become party to the treaty"[139].

Further to this, the restrictive understanding of Chinese and Russian drafters of the notion of *weaponisation*[140] of outer space impregnates the whole article, being more convenient to conceive it as "a broader and dynamic concept which also includes Earth-related events that have a destabilising effect on the security of objects located in space"[141]. Without the shadow of a doubt, ASAT weapons represent a threat as their mere presence destabilises international relations (IR) by increasing the levels of uncertainty as well as the likelihood of space objects being objects of attack in a situation of conflict, having to be all actions

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[134] NIE, M., "Space Privatization in China's National Strategy of Military-Civilian Integration: An Appraisal of Critical Legal Challenges", *Space Policy*, Vol. 52, 2020, pp. 1-7, p.1.

[135] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 398.

[136] WEEDEN, B., SAMSON, V., "India's ASAT test is wake-up call for norms of behavior in space", *Space News* [online], 2019. Available in: <https://spacenews.com/op-ed-indias-asat-test-is-wake-up-call-for-norms-of-behavior-in-space/> (Accessed 25 February 2022).

[137] WEEDEN, B., SAMSON, V., *op. cit.*, footnote 136.

[138] Treaty, *op. cit*., footnote 91, Article II.

[139] LISTNER, M., RAJAGOPALAN, R., "The 2014 PPWT: a new draft but with the same and different problems", *The Space Review* [online], 2014. Available in: <https://www.thespacereview.com/article/2575/1>. (Accessed 25 February 2022).

[140] "Militarisation is a legal and legitimate activity in the space domain while weaponisation has limitations if not banned" found in MONTES TOSCANO, B., MUNOZ MOSQUERA, A., *op. cit.*, footnote 71, p. 12.

[141] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 44.

consisting of their advancement and safekeeping considered as components of the weaponisation of outer space.

Article II of the Draft PPWT prohibits the placement of any weapons in outer space, which may be interpreted as encompassing the testing of every weapon as they need to be placed in outer space first —with the exception of those tested in a simulated environment on the Earth—[142]. Nevertheless, the testing of dual-use technologies as ADR is not forbidden, saving the cases where they are converted or used for the "threat or use of force against outer space objects"[143]. Moreover, ground-based ASAT systems are not expressly addressed, although they are indirectly and to a degree forbidden by the clause "not to resort to the threat or use of force against outer space objects of States Parties to the Treaty" —clause which echoes the Moon Treaty's "hostility" formula—[144]. As the mentioned threat or use of force can emanate from space-based weapons or terrestrial-based weapons, it could be interpreted that this disposition bans the deployment of terrestrial-based ASAT systems[145]. While the Draft PPWT clearly leaves research and development of terrestrial-based ASATs unrestricted, testing is also likely unrestricted, as testing is typically aimed against a State's own satellite[146].

On one hand, it should be taken into consideration that weaponry requires to be tested since without it there is no way of ensuring their trustworthiness. Hence, if the Draft PPWT truly aims to increase "the security of space objects" as well as to decrease their targeting, there is no other solution but to forbid ground-based ASAT technology tests. Unfortunately, the Draft PPWT does not prevent them and it certainly sabotages the chances of Western backing.

On the other hand, the underlying reason to this decision is that "the development and testing of ground-based ASATs is consistent with the strategic and defence policies of the proponents of the Draft PPWT, especially China"[147]. The Popular Republic of China has managed "many RPOs to their satellites, probably testing dual-use counter-space technology and in 2008 also approached the International Space Station with its BX-1 miniature imaging satellite, potentially simulating co-orbital strike"[148]. Apart from this, it is also worth noting that Beijing has "tested grappling arms that could serve as efficient ASAT capabilities"[149].

Definitely, the Draft PPWT permits ground-based ASAT technology testing when using as target space objects belonging to the State conducting the tests in question, as the definition of *threat of force* only appertains to the written or oral intention of damaging a space object being owned by another State.

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[142] SU, J., *op. cit.*, footnote 93, p. 73.
[143] Ibid., p. 74.
[144] Ibid., p. 74.
[145] Ibid., p. 74.
[146] Ibid., p. 74.
[147] TRONCHETTI, F, HAO, L., *op. cit.*, footnote 1, p. 44.
[148] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 400.
[149] Ibid., p. 400.

3.3.2. The inherent right of individual or collective self-defence (Arts. III and IV).

Both Articles III and IV of the Draft PPWT clearly state that nothing in the present Treaty shall impair "the inherent right of individual or collective self-defence as recognized by Article 51 of the UN Charter" of the State Parties[150]. This statement comes as a surprise due to the fact that "China has objected in strong terms to its reference in the International Code of Conduct for Outer Space (ICoC)"[151]. What is more, the mention of Article 51 in 2008 PPWT has been extended, encompassing in the actual Draft PPWT a reference to collective self-defence. "This inconsistency between railing against the mention of Article 51 in the ICoC and promoting it within the PPWT brings into question the legitimacy for bringing the current draft forward to coincide with negotiations for the ICoC"[152].

Nonetheless, several misgivings are left unresolved, being mainly the type of activities that States Parties can legitimately undertake and which are the limitations and due duration of those acts. Contradictorily, those actions adopted in the name of self-defence are likely to be outlawed by the Draft PPWT. Understandably, the question that arises is whether the use "of a forbidden "weapon in outer space" could become permissible if it is declared as the exercise of self-defence subject to Article 51 of the UN Charter"[153].

The recognition of this inherent right of the State Parties could be considered a mere formality since the UN Charter is fully applicable to the space endeavours pursued by UN Member States. Besides, Article III of the Outer Space Treaty recognizes the applicability of the UN Charter and its prevalence in case of conflict over other legal instruments[154]. Thus, in reality, the Draft PPWT lacks added value as it does not prescribe the principles and conditions under which this right could be exercised nor clarify its applicability in a catastrophic scenario.

3.3.3. Transparency and confidence-building measures (Art. V).

Transparency and confidence-building measures —the so-called TCBMs— are dealt in Article V of the Draft PPWT. Even though the Draft acknowledges the necessity to adopt measures capable of guaranteeing compliance with the provisions outlined in the Treaty, it fails to arrange or list them and postpones their discussion for a future protocol. Hence, "a State will have to legally bind itself to the PPWT" with the consequent vagueness before every detail is set in stone. "That would give Russia and China significant legal influence to back a State into a legal and political corner, all the while enhancing its soft-power base in the United Nations and, specifically, in the Conference of Disarmament"[155].

Besides the validation of the fact that "States Parties can implement on a voluntary basis, unless agreed otherwise" decided TCBMs, there is no mention of which type of TCBMs are allowed apart from the mentioning in Article VI of the Draft PPWT of the Executive

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[150] Treaty, *op. cit*., footnote 91, Article V.
[151] LISTNER, M., RAJAGOPALAN, R., *op. cit.*, footnote 139.
[152] LISTNER, M., RAJAGOPALAN, R., *op. cit.*, footnote 139.
[153] JAKHU, R. S., DEMPSEY, P. S., *op. cit.*, footnote 124, p. 212.
[154] SU, J., *op. cit.*, footnote 93, p. 74.
[155] LISTNER, M., RAJAGOPALAN, R., *op. cit.*, footnote 139.

Organisations' power to "collect and distribute information provided as part of transparency and confidence-building measures"[156]. Still, from this provision it can be inferred that China backs the United Nations resolution on TCBMs although it contends that "the best way to prevent the weaponisation of and an arms race in outer space is to conclude a new international legal instrument through negotiation"[157]. Indeed, according to the Representative of China to the Conference on Disarmament and the Charge d'affaires a.i. of the Russian Federation, "the achievement of some intrusive TCBMs is possible only under legally binding agreements"[158].

Moreover, the absence of a verification mechanism does not effectively prevent the infringement of the Draft PPWT provisions and renders the Draft deeply debilitated. Surely, in the eyes of critics it could be interpreted as another evidence of the "substantial grounds for the use of Lawfare as a means to project influence regarding the military use of outer space" rather than as a true norm-setting attempt[159]. Owing to the delicate nature and the "security implications that space technology and ASAT devices" represent, the most feasible verification method is that which "envisions remote sensing surveys and on-site inspection undertaken by an international team" —a team that "combines national and international technical verification measures"—[160].

In conclusion, up-coming normative-setting on the forestalling of arms race in outer space should prioritise TCBMs instead of discursive diplomacy[161].

3.3.4. The Executive Organisation (Art. VI).

The Executive Organisations' central role is established in Articles VI and VII of the Draft PPWT. Concretely, its role is prominent regarding the procedure for the settlement of disputes and the general running of the treaty. This body was already disclosed in the 2008 Draft PPWT, but the current Draft PPWT establishes some of its responsibilities and functions.

Nevertheless, the Draft PPWT remains silent in respect of some relevant matters as "the procedure of formation, the composition of the working bodies, operating procedures and provision of work of the Executive Organisation" which "shall be subject of an additional

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[156] Treaty, *op. cit*., footnote 91, Article IV.

[157] The Popular Republic of China. *China's Views on Transparency and Confidence-Building Measures in Space Activities* [online]. Available in: <https://www.un.org/disarmament/wp-content/uploads/2017/04/China-E-In-extenso.pdf> found in BIN, L., *op. cit.*, footnote 9, p. 606.

[158] Conference on Disarmament, "Letter dated 11 September 2015 from the Permanent Representative of China to the Conference on Disarmament and the Charge d'affaires a.i. of the Russian Federation addressed to the Secretary-General of the Conference transmitting the comments by China and the Russian Federation regarding the United States of America analysis of the 2014 updated Russian and Chinese texts of the draft treaty on prevention of the placement of weapons in outer space and of the threat or use of force against outer space objects (PPWT)", 2015, CD/2042, pp. 1-7. Available in: <https://digitallibrary.un.org/record/633470?ln=es> (Accessed 4 March 2022).

[159] MONTES TOSCANO, B., MUNOZ MOSQUERA, A., *op. cit.*, footnote 71, p. 5.

[160] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 44.

[161] BIN, L., *op. cit.*, footnote 9, p. 602.

protocol"[162]. This is, there are no details on the "establishment, composition and operating procedures" of the body in question. Again, the Chinese and Russian drafters in order to grant the Draft Treaty with some added value, they could have provided some brushstrokes to these inquiries instead of blatantly delaying it.

3.4. Procedural dispositions.

3.4.1. The dispute settlement procedure (Art. VII).

Article VII of the Draft PPWT invites States Parties to, whenever there are "reasons to believe that another State Party fails to fulfil the obligations imposed by this Treaty", make the effort of finding a solution through diplomatic means[163]. The Draft PPWT firstly invites the States Parties to request clarifications to the State Party they suspect upon, if those clarifications are unable to solve their concerns, they "may request consultations with the requested State Party"[164]. Moreover, the Executive Organisation plays a privileged role as "the information concerning the outcome of consultations" shall be sent to it and afterwards, the body will share it with the rest of the States Parties[165].

In the unfortunate event that the "consultations do not lead to a mutual settlement, [...] shall seek the assistance of the Executive Organisation [...]". By this assistance, the Executive Organisation is able to set a meeting among States Parties with the aim of reviewing the dispute, to make decisions identifying a violation of the Draft Treaty and to prepare recommendations based on States Parties' proposals to settle the dispute and eliminate the breach[166]. However, the Draft PPWT does not grant the Executive Organisation with enforcement authority and when it is unable to settle the dispute or eliminate the breach, the only tool at hand is to bring the case to the attention of the UN General Assembly or the UN Security Council[167].

The Draft PPWT also allows the Executive Organisation to, whenever they are dealing with a case related to it, make use of the provisions of the Convention on International Liability for Damage Caused by Space Objects of 1972[168]. In spite of that, the Draft PPWT does not refer to "the potential applicability of the most recent legal advancement in the area of settlement of space-related disputes, namely the Permanent Court of Arbitration (PCA) Optional Rules for Arbitration of Disputes Relating to Outer Space Activities"[169]. "The availability of the Rules to impartially arbitrate a dispute arising out of an enacted PPWT would be an obvious option as part of any dispute resolution mechanism in order to obtain an impartial resolution"[170]. "That the Rules are not included

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[162] Treaty, *op. cit*., footnote 91, Article VI.
[163] Ibid., Article VII.
[164] Ibid., Article VII.
[165] Ibid., Article VII.
[166] Ibid., Article VII.
[167] Ibid., Article VII.
[168] Ibid., Article VII.
[169] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 43.
[170] LISTNER, M., RAJAGOPALAN, R., *op. cit.*, footnote 139.

as an option in the current draft of the PPWT suggests that either the drafters overlooked the availability of the Rules, or that they are not concerned with impartiality, which again brings into question the motivation of the accord"[171].

Notwithstanding, it is a positive achievement the inclusion of a procedure by which States Parties can reach a bilateral compromise on a disagreement, request assistance and in a later stage, bring their case to the attention of the UN General Assembly or the UN Security Council. Therefore, the creation of this procedure should be considered a committed attempt of the Popular Republic of Chinese and the Russian Federation to make the Draft PPWT able to reach its primary goals, ensure the "security of space objects as well as international peace" despite its flaws.

3.4.2. International intergovernmental organisations as Parties (Art. VIII).

Article VIII of the Draft PPWT establishes the conditions that international intergovernmental organisations need to fulfil so as to be able to join the Treaty: to operate in outer space, to declare the assumption of the obligations provided in the Treaty and to converge on the majority of their memberships. Apparently, these conditions have been written imitating those of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (1979) such as Article 15.2 of the Agreement[172]. In addition, the inclusion of a wider spectrum of stakeholders is a wise decision and acknowledges the prominent role that especially private entities represent in the space sector.

3.4.3. The amendment procedure (Art. XI).

Article XI of the Draft PPWT foresees the amendment procedure of the Treaty. In line with the Article, amendments shall be submitted to the UN Secretary General for circulation to all States Parties and they are approved by consensus. As with most legal instruments whose decisions are adopted according to the consensus decision-making method, there is the possibility to convene an amendment conference if at least one third of the States Parties agrees to do so[173]. Moreover, the depositary role ascribed to the UN Secretary General reflects "other existing international (space) treaties"[174].

3.4.4. The Withdrawal clause (Art. XII).

Finally, Article XII of the Draft PPWT allows States Parties to "in exercising its national sovereignty" withdraw from the Treaty due to "extraordinary events, related to the subject matter of this Treaty" that have jeopardised the Party's supreme interests —meaning

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[171] Ibid., footnote X.

[172] CASANOVAS, O., RODRIGO, A. J., *op. cit.*, footnote 133, p. 381.

[173] Treaty, *op. cit*., footnote 91, Article IX.

[174] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 43.

security interests—[175]. The notification shall be handed to the UN Secretary General —highlighting again its role as depository—, stating the extraordinary events behind the decision and six months in advance of the effective withdrawal from the Treaty[176].

3.5. Conclusions on the Draft PPWT: A limited added value proposal.

The Draft PPWT has been another instrument that pertains to support the Chinese expansionist aims in outer space as well as an evidence of the Popular Republic of China's "astropolitik" approach. Moreover, it constitutes another evidence of the existing rivalry of major powers on systems and rules[177].

Rather than a legitimate effort to move the Draft PPWT forward, the timing of this new draft suggests that it was merely an effort by Beijing and Moscow to breathe life into the CD, preserve their soft-power advantage among United Nation developing countries, and divert attention away from the ICoC and the effort to use TCMBs in the Group of Governmental Experts (GGE) to address outer space security issues[178]. Taking a harsher stand, other scholars contend that "the NFP initiative by China and Russia is a strategy to constrain the technological advantage of the US and prevent it from placing weapons in space, while in the meantime enabling them to catch up in the mastering of these technologies and stockpiling ground-based weapons"[179]. Spacefaring nations —and specially those who aim to become rule-makers— have to draw the credibility of any normative proposal upon their concrete behaviours in outer space rather than just by the discourse that surrounds their initiative[180].

Regarding its added value as *lex specialis*, it comes as no surprise to affirm that it is certainly limited. The definitions on which the text is based are incomplete, the prohibitions prescribed for State Parties do not help in the last instance to guarantee the security of space objects and the mention of Article 51 of the UN Charter languishes several unresolved misgivings. Moreover, it fails to propose verification mechanisms as well as to prioritise TCBMs instead of discursive diplomacy and it blatantly delays the outlining of the Executive Organisation. But first and foremost, the Draft PPWT fails to effectively deal with the limitations that will be covered in the following Section.

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[175] Treaty, *op. cit*., footnote 91, Article XII.
[176] Ibid., Article XII.
[177] MONTES TOSCANO, B., MUNOZ MOSQUERA, A., *op. cit.*, footnote 71, p. 16.
[178] LISTNER, M., RAJAGOPALAN, R., *op. cit.*, footnote 139.
[179] JULIENNE, M., *op. cit.*, footnote 13, p. 37.
[180] BIN, L., *op. cit.*, footnote 9, p. 608.

4. THE MAIN LIMITATIONS OF THE DRAFT TREATY ON THE PREVENTION OF THE PLACEMENT OF WEAPONS IN OUTER SPACE, THE THREAT OR USE OF FORCE AGAINST OUTER SPACE OBJECTS.

The Draft PPWT has been criticised, "*inter alia*, for not addressing the most serious threats to space objects, strategically favouring the interests of its co-sponsors and lacking reliable means of verification"[181]. The identified limitations are the incapacity to address direct-ascent anti-satellite systems, the non-provision of verification tools and the major issue of space debris or long-term sustainability of outer space.

In order to obtain the broader picture, the present Section aims to dwell on the explanation of the identified limitations, to provide the arguments behind the criticisms done to the Draft PPWT and to analyse the motives that took the Popular Republic of China and the Russian Federation to adopt these drafting decisions.

4.1. The incapacity to address direct-ascent anti-satellite systems.

The primary goal of the UN Charter is the maintenance of international security —thus, comprehending space security— being the weaponisation of outer space "a major challenge for the international security system"[182]. Moreover, the inherent vulnerability of satellites as well as the intensifying dependence of societies and militaries on the services they offer has sparked concerns that they may become appealing targets in future conflicts[183]. All in all, "some nations are affirmatively engaged in detrimental behaviours, such as debris-generating ASAT testing" consisting of "short-sighted, self-serving, and outrightly dangerous behaviours that could hasten the demise of space as a critical global asset"[184].

According to Orde F. Kittrie "much as China is using lawfare to prepare to its advantage the maritime and aviation battlefields, it is also using lawfare to prepare to its advantage the outer space battlefield"[185]. Regarding outer space governance, "meaningful rule-making activities have to serve common interests in place of parochial national interests"[186]. What is more, "any State who intends to play the role of rule-maker for maintaining the peace in and the optimal use of the outer space has to address the challenges of collective action and strategic assurance"[187], something the Draft PPWT and thus the Popular Republic of China failed to achieve.

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[181] TRONCHETTI, F, HAO, L., *op. cit.*, footnote 1, p. 38.

[182] KYRIAKOPOULOS, G. D., "NATO Space Policy in the light of the Prevention of an Arms Race in Outer Space (PAROS) initiative: Legal considerations", *NATO Legal Gazette*, Vol. 42, 2021, pp. 26-35, p. 34.

[183] SLAPAKOVA, L., OGDEN, T. V., BLACK, J., "Strategic and Legal Implications of Emerging Dual-Use ASAT Systems", *NATO Legal Gazette*, Vol. 42, 2021, pp. 178-193, p. 181.

[184] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 54.

[185] KITTRIE, O. F., *op. cit.*, footnote 63, p. 168.

[186] BIN, L., *op. cit.*, footnote 9, p. 590.

[187] Ibid., p. 590.

The use of outer space for active military purposes, such as destroying or crippling a competitor's assets, takes numerous forms —Earth-to-Space, Space-to-Earth and Space-to-Space— and is continuously evolving[188]. "Earth-to-Space capabilities denote ground-based or ground-air launched anti-satellite weapons or antiballistic missile systems, ground-based lasers, used for tracking and blinding, and kinetic kill vehicles"[189]. Conveniently, "Space-to-Earth capabilities do not currently exist, nor do Space-to-Space, however, any satellite can, at least theoretically, be converted into such a weapon"[190]. Despite "direct space-to-space engagements between two satellites, such as phasing manoeuvres, remain technically and operationally challenging", it exists "a range of manoeuvres that can cause danger or disruption"[191].

China's intention to participate in the governance of outer space, is part of a strategy that aims to give the impression of making efforts to "harness its space policy" and of fortifying its "international status as a responsible rising power"[192]. However, it fails resoundingly by leaving aside the regulation of the research, development, testing, production, storage, or deployment of "ASAT or ABM systems and ground-based lasers used for tracking" as well as blinding[193]. If the laser is powerful enough, apart from dazzling the targeted satellite, "it can even burn satellite sensors and disable them"[194].

To dispel doubts about China's space activities, as well as the joint initiative with the Russian Federation on non-weaponisation in space, China must be more transparent, earning international community's trust and confidence in regard to ASAT testing[195]. In front of United States' comments on the Draft PPWT inability to prohibit "the research, development, testing, production, storage, or deployment of terrestrially-based anti-satellite weapons; thus, such capabilities could be used to substitute for, and perform the functions of, space-based weapons"[196], Beijing's and Moscow's representatives replied that even if it was accurate that neither terrestrially-based nor sea- or air-based ASAT weapons were directly prohibited under the Draft PPWT, their proliferation is restricted through a comprehensive ban on the placement in outer space of weapons of any kind, including this class of weapons[197]. Therefore, the drafting nations claim that the Draft Treaty is effective in addressing the ASAT issue due to the introduction of a general ban on the use of force, regardless of its source, against space objects[198]. Despite

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[188] MOON, M., "The Space Domain and Allied Defense", *NATO Parliamentary Assembly*, 2017, pp. 1-13, p. 5.

[189] MOON, M., *op. cit.*, footnote 188, p. 5.

[190] MOON, M., *op. cit.*, footnote 188, p. 5.

[191] SLAPAKOVA, L., OGDEN, T. V., BLACK, J., *op. cit.*, footnote 183, p. 182.

[192] BIN, L., *op. cit.*, footnote 9, p. 590.

[193] MOON, M., *op. cit.*, footnote 188, p. 5.

[194] Ibid., p. 8.

[195] BIN, L., *op. cit.*, footnote 9, p. 605.

[196] Conference on Disarmament, "Note verbale dated 2 September 2014 from the Delegation of the United States of America to the Conference on Disarmament addressed to the Acting Secretary-General of the Conference transmitting the United States of America analysis of the 2014 Russian-Chinese draft treaty on the prevention of the placement of weapons in outer space, the threat or use of force against outer space objects" 2014, CD/1998. Available in: <https://digitallibrary.unog.ch/80256EE600585943/%28httpPages%29/91543774035C8383C125799F003B295C?Opendocument.> (Accessed 4 March 2022).

[197] Conference on Disarmament, *op. cit.*, footnote 158, p. 6.

[198] Ibid., p. 6.

manifestations as the later, China's credibility as a leader in the non-weaponisation initiative is harmed by its usual silence on this subject[199].

The Draft PPWT could be viewed as an illusion game by which its co-sponsors aim to convey a real concern for space weaponisation and its proliferation when, in reality, they are tailoring a treaty to their national security concerns and extrapolating their national interests in this area. Indeed, "both China and Russia have developed modern space warfare programmes over the last decade, being the Chinese programme well-funded and, as tests have shown, diverse in its capabilities"[200].

The Draft PPWT does not attempt to safeguard the global commons dimension of outer space, instead it allocates national strategy and interest in a predominant position[201]. In addition, it is not unreasonable to think that "China and the Russian Federation pursue a legal resistance to the US dominated militarization of outer space"[202]. Arguably, the United States "is still widely considered the world leader in space; with the largest space budget, a vast network of military and commercial satellites, and a burgeoning commercial space sector"[203]. Notwithstanding, "debates on a draft treaty should not be politically manipulated to hinder any meaningful normative development regulating conducts in outer space"[204].

Even when treaty clauses are drafted clearly and leaving little room for interpretation, State Parties tend to interpret them in the most favourable light or "may even apply the rules arbitrarily if pursuing interests in an *ad hoc* manner stemming from a lack of a defined body of domestic space law and regulation", thus putting in peril conflict resolution if not making it impossible[205]. Conceivably, when treaty clauses are "broad in scope and ambiguous" they can lead to, "*inter alia*, misperceptions and the intentional avoidance of responsibility"[206]. Therefore, the dangers of the absence of specific provisions on ground-, sea- and air-based ASAT systems may even constitute more alarming and threatening as it could "lead to their proliferation as well as to the development of offensive technology that falls outside of the definition of weapon provided by the PPWT"[207].

Concretely, the "exclusion of ground- and sea-based ASAT devices is particularly detrimental", because it turns a blind eye to "the fact that an increasing number of States possess them, their recent testing and the possibility for ASATs to be used in the event of a conflict"[208]. Indeed, according to Douglas G. Ligor and Bruce McClintock, "the possibility of a terrestrial conflict extending into space or a conflict beginning in space is becoming increasingly real" especially if exacerbated by three interrelated factors—more

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[199] BIN, L., *op. cit.*, footnote 9, p. 605.
[200] MOON, M., *op. cit.*, footnote 188, p. 6.
[201] BIN, L., *op. cit.*, footnote 9, p. 594.
[202] Ibid., p. 603.
[203] MOON, M., *op. cit.*, footnote 188, p. 3.
[204] BIN, L., *op. cit.*, footnote 9, p. 604
[205] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 62.
[206] Ibid., p. 61.
[207] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 40.
[208] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 40.

spacefaring nations and companies, more risk of collisions, and growing risk of conflict—and "the lack of a mature governance system for space"[209].

Nonetheless, this drafting decision is comprehensible as "the development and testing of ground-based ASATs is consistent with the strategic and defence policies of the proponents of the PPWT, especially China" —who contends that further testing will likely enhance its capabilities—[210]. Nevertheless, this exclusion of ASAT systems does not only serve the interests of the Popular Republic of China and the Russian Federation, but of all nations in position of conducting ASAT tests such as India. Indeed, "Japan, Israel, and France can also be considered turn-key ASAT players in today's international space defence environment, as they are currently only barred from entry by the political will to do so, rather than by technological capabilities"[211].

The successful trial by India on the 27th of March 2019, against its satellite Microsat-R which was at a low altitude —and producing a relatively small amount of space debris—, constitutes "evidence of the more complex space domain, the lack of progress on developing norms of behaviour for space, and the challenges of ensuring its long-term sustainability"[212]. Arguably, while the United States "continues to raise concerns about the 2007 Chinese ASAT test, it refrained from calling for a norm against such testing, most likely because US officials want to maximise their own freedom of action for missile defence or ASAT testing"[213]. Apparently, the only non-written norm regulating the test of "kinetic ASAT weapons against satellites" is to realise them in such a way that "you try and minimise the resulting orbital debris"[214]. Hence, "the realist paradigm persists in the behaviour of major space powers and the absence of space norms forges the opportunities for space weaponisation"[215].

In addition to "honing its direct-ascent ASAT capabilities, China is also likely developing co-orbital attack capabilities"[216]. As Linda Slapakova, Theodora V. Ogden and James Black brilliantly explain, "Co-orbital ASATs can be used by placing a satellite into orbit and manoeuvring it to deliver direct or indirect action against another satellite. Theorised attack methods then include everything from basic surveillance and ramming through to the use of chemical sprays, nets, mines, pellets, harpoons, robotic arms and other intricate measures", most of which are "yet to be operationalised"[217]. Nevertheless, these "co-orbital armed satellites, non-destructive or covert methods" and dual-use technology are modestly covered by the Draft PPWT as it will be explained later on.

Non-destructive and covert methods, which consist of "cyber-attacks, jamming, spoofing, or dazzling" are alternative means to "disrupt and deny access to satellite capabilities"[218]. While considered less devastating to outer space environment and potentially less

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[209] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, pp. 58-59.
[210] Ibid., p. 44.
[211] MOON, M., *op. cit.*, footnote 188, p. 6.
[212] WEEDEN, B., SAMSON, V., *op. cit.*, footnote 136.
[213] Ibid.
[214] Ibid.
[215] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 403.
[216] MOON, M., *op. cit.*, footnote 188, p. 6.
[217] SLAPAKOVA, L., OGDEN, T. V., BLACK, J., *op. cit.*, footnote 183, p. 182.
[218] MOON, M., *op. cit.*, footnote 188, p. 7.

traceable, many forms of non-kinetic attacks are very difficult to attribute [219]—testing may occur unobserved and their deployment is hardly verifiable even by the most intrusive measures—[220]. This stirs fears of "quick escalation and questions of proportionality of response in a near future conflict where space-assets would likely be involved"[221]. As a matter of fact, "space warfare is more likely to involve the denial of vital information flows supporting command and control of an enemy's forces, rather than the exoatmospheric destruction of its space-based assets. Russia and China are already heavily invested in this domain, ultimately seeking the means to disrupt US hegemony in space"[222]. Thus, insofar as non-destructive and covert methods testing is concerned, the Draft PPWT could advisably have covered a prohibition on ground-based ASATs, restricting itself to kinetic ones with lasers dealt in a separate manner[223].

Even if dual-use technology is not essentially a weapon, "some dual-use systems dispose of a technology that may be misused for the space weaponisation"[224]. For instance, ADR systems —which are purposed to remove a dysfunctional space object by using another spacecraft— are a good example of how space assets can be utilised for both benign and aggressive actions"[225]. Indeed, it has already been mentioned in Section 2 that recently a Chinese satellite was witnessed grabbing another satellite and days later dismissing it into a graveyard orbit. That, however, indicates that ADR systems can also be used for the ousting of, or the interference with a functioning device[226].

Moreover, hybrid operations, understood as "intentional, temporary, mostly reversible, and often harmful space actions/activities specifically designed to exploit the links to other domains and conducted just below the threshold of requiring meaningful military or political retaliatory responses" are often based on dual-use capabilities or in combination with non-destructive and covert methods[227]. The prohibition of the conversion of satellites into weapons and the use of satellites as weapons is conceivably the best legal solution at hand in respect of the dual-use conundrum and intercontinental ballistic missiles (ICBM) —which can be transformed into ground-based ASATs—[228].

All in all, the just mentioned three main problems are partially attended by the Draft PPWT. First, co-orbital armed satellites would be covered under the vague definition of *weapon in outer space* as kinetic energy weapons or lasers to a grappling-capable robotic arm are clear a "component produced or converted to eliminate, damage or disrupt normal functioning of objects in outer space"[229]. Second, non-destructive and covert methods could be easily comprehended inside the phrasing "intended action to inflict damage to outer space object under the jurisdiction and/or control of other States" since that is their

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[219] Ibid., p. 7.
[220] SU, J., *op. cit.*, footnote X, p. 90.
[221] MOON, M., *op. cit.*, footnote 188, p. 7.
[222] Ibid., p. 7.
[223] SU, J., *op. cit.*, footnote 93, p. 91.
[224] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 399.
[225] Ibid., p. 401.
[226] Ibid., p. 399.
[227] Ibid., p. 399.
[228] SU, J., *op. cit.*, footnote 93, p. 85.
[229] Treaty, *op. cit*., footnote 91, Article I.

overall main purpose[230]. Third, dual-use technology would also be included as the Draft Treaty uses rightfully the sentence "component produced or converted"[231]. However, it needs to be reminded before reaching rushed conclusions that; on the one hand, the Draft PPWT only prohibits the use of such space objects for hostile purposes as well as their conversion for such purposes —not their research, development, etc.— and on the other hand, that detecting whether a conversion has been made to such objects into space-based ASATs is arduous to say the least —as very few States possess national technical means of verification—[232].

Nevertheless, we cannot permit ourselves to be blinded by naivety. Even if the Draft PPWT observes and condemns these technologies or activities, it does not mean that space powers are not working on their development nor that they are not currently employing them. On the contrary, until the Treaty is not ratified or other initiatives agreed, in the meantime, they are heading in that direction as there is no rule which prevents them from doing so. Hence, the non-ratification of the Draft PPWT can be even convenient for the co-sponsors as, while portraying themselves as concerned nations, meanwhile are ensuring themselves with the needed time to develop such techniques. Rather than *inter arma, silent leges,* this time would be *silent leges, inter arma;* especially regarding ASAT technology, which in comparison with space-based weapons —whose "technological immaturity and costs" barrel their "proliferation"— is bound to be the preferable method[233].

In conclusion, the exclusion of ground-based ASATs is highly detrimental as it ignores that a significant —and increasing— number of States possess them and underestimates the possibility of their deployment in the event of a conflict. The Draft PPWT is evidence of the still rampant realist theories by not attempting to safeguard the global commons dimension of outer space and allocating instead its co-sponsors national strategies and interests in a predominant position[234]. In this respect the Popular Republic of China has two main challenges ahead; first, it needs to "balance the national interest with the common interest of global space governance"[235] and second, it must "address the question whether continuous anti-satellite tests are really necessary both for China and international community, giving due consideration to the sustainable use of outer space"[236].

4.2. The non-provision of verification tools.

In arms control treaties, while both are secondary-level obligations, compliance is the ultimate aspiration whereas verification is one of the main means of ensuring that the

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230 Ibid., Article I.

231 Ibid., Article I.

232 SU, J., *op. cit.*, footnote 93, p. 90.

233 PRAˇZAˊK, J., *op. cit.*, footnote 4, p. 400.

234 BIN, L., *op. cit.*, footnote 9, p. 594.

235 Ibid., p. 611.

236 Ibid., p. 611.

former is accomplished[237]. Verification comprises the gathering and compiling of evidence as well as a conclusion on the fulfilment of particular verification standards[238]. However, even if not all arms control treaties own verification tools —for instance, the Partial Test Ban Treaty and the Outer Space Treaty—, this does not negate the significance of ensuring compliance with arms control treaties nor it could be affirmed that verification is trivial[239]. The rationales behind the absence of a verification regime in both treaties are the minor strategic advantages derived from violations as well as the capacity to verify compliance with unilateral measures[240]. Violations may be noticeable with national monitoring facilities when lacking a collective verification framework.

Considering current technical feasibility and the meaningful strategic advantages received from wrongful behaviours, verification appears to be required for the management of conventional weapons in outer space and ground-based ASATs. While the testing and use of conventional weapons in outer space and ground-based ASAT systems that generate debris are easily detectable with present space surveillance technologies, "on-orbit manoeuvres and rendezvous of satellites can be ambiguous as they are not necessarily test of co-orbital systems, but could be test of an on-orbit inspection capability"[241]. The fragile legal regime of registration for space objects launched into outer space is of little help in this matter.

On account to the delicate nature and the "security implications that space technology and ASAT devices" represent, the most feasible verification method is that which "envisions remote sensing surveys and on-site inspection undertaken by an international team" —a team that "combines national and international technical verification measures"—[242]. Even significantly intrusive methods like on-site inspections cannot guarantee adequate verification due to the following reasons: first, the research and advancement of both categories of space weapons can be executed furtively and second, the diminishing size and rising mobility of ground-based ASATs[243]. Nonetheless, regardless of whether these intrusive approaches were up to the task, space-faring governments would be unlikely to adopt them due to the high level of confidentiality and sensitivity of space activities.

Verification becomes even more complicated due to the technical similarity between ICBMs and ground-based ASATs as well as the dual-use nature of space-based technologies such as ADR[244]. As surprising as it might seem, the United States, the Popular Republic of China and the Russian Federation see eye to eye on the incapability of current existing technologies and co-operative measures to effectively verify an agreement banning space-based weapons[245]. Owing to the hindrance that verification represents —in political and technical terms—, existing initiatives on the prevention of outer space weaponisation either postpone the matter for future discussion —the Draft

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[237] SU, J., *op. cit.*, footnote 93, p. 86
[238] Ibid., p. 86.
[239] Ibid., p. 87.
[240] Ibid., p. 87.
[241] Ibid., p. 88.
[242] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 44.
[243] SU, J., *op. cit.*, footnote 93, p. 88.
[244] Ibid., p. 88.
[245] Ibid., p. 88.

PPWT— or avoid primary-level commitments that are difficult to verify[246]. Until the adoption of a space arms control treaty encompassing primary-level obligations and paired with verifiability is not achieved, a combination of primary-level and secondary-level obligations may be pursued[247].

The Permanent Representative of China to the CD and the Charge d'affaires a.i. of the Russian Federation explained back in 2015 that the reason behind this absence is that "The Outer Space Treaty does not provide for any mechanism for verifying the fulfilment of this obligation and during the half a century that it has been in force no questions about verification have been raised"[248]. Moreover, they argue that the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxic Weapons and on Their Destruction was "originally meant to include provisions on verification", but "owing to the complexity of verification mechanisms, the Convention itself was adopted first" and the same rationale stands behind the Draft PPWT[249]. Thus, the drafters seem to acknowledge that the Draft PPWT fails to fulfil the *criterion of effective verification*, that is to say "the ability to detect a militarily significant violation in time to respond effectively and to deny the violator the benefit of the violation"[250].

Furthermore, in the letter written in the framework of the CD, both co-sponsors propose that "Certain measures of verification may be carried out in a preventive manner through a system of data exchange between States and analysis of the situation in outer space", consisting of yearly statement about States Parties outer space policies and strategies and take appropriate confidence-building measures for that purpose[251]. But above all they argue that "it is precisely following the entry into force of the PPWT, on the basis of the experience gained in implementing it, that joint efforts could be made to begin to develop a truly effective verification mechanism"[252]. Arguably, instead of postponing the matter and starting from scratch in a later future, another possibility would be to establish a verification mechanism whose amendment procedure would be relatively easy to follow, thus, enabling its continuous revision and evolution towards efficiency.

In the midst of this scenario, transparency and confidence-building measures have taken up much of the spotlight. TCBMs are in general terms, "a means by which Governments can share information with an aim of creating mutual understanding and trust, reducing misperceptions and miscalculations and thereby helping both to prevent military

[246] Ibid., p. 88.
[247] Ibid., p. 89.
[248] Conference on Disarmament, *op. cit.*, footnote 197, p. 6.
[249] Conference on Disarmament, *op. cit.*, footnote 197, p. 5.
[250] SU, J., *op. cit.*, footnote 93, p. 90.
[251] KYRIAKOPOULOS, G. D., *op. cit.*, footnote 182, p. 5.
[252] Ibid., p. 5.

confrontation and to foster regional and global stability"[253]. Concretely, "TCBMs are strictly voluntary in nature and come in a variety of forms"[254].

The UN General Assembly with the Resolution A/RES/65/68 (2011) requested from the UN Secretary General to set up "a Group of Governmental Experts (GGE) to conduct a Transparency and Confidence-Building Measures (TCBMs) survey"[255]. The Final GGE Report (2013) recommends in Section IV through VIII: "information exchange on national space policy and goals, and exchange of information on military space expenditures; information exchange on activities in outer space, including orbital parameters, possible conjunctions, natural space hazards, and planned launches; notifications on risk reductions such as scheduled manoeuvres, uncontrolled high-risk re-entries, emergency situations, intentional orbital breakups; and voluntary visits to launch sites and command and control centres, and demonstrations of space and rocket technologies"[256]. Most of which are conspicuous by their absence in the Draft PPWT.

Simultaneously, "the UN General Assembly has endorsed, and further encouraged (A/RES/68/50), the implementation of the TCBMs"[257]. Besides, "international cooperation, consultative mechanisms, outreach, and coordination are also examined and encouraged as appropriate TCBMs for space"[258], since "their implementation can help increasing the security, safety and sustainability of outer space"[259]. Recognising the relevance of TCBMs, the UN General Assembly "through recurring resolutions"[260] has repeatedly implored States Members to "to contribute actively to the objective of the peaceful use of outer space and of the prevention of an arms race in outer space and to refrain from actions contrary to that objective [...]"[261]. The myriad of resolutions adopted during UN General Assembly's 2019 session —on international cooperation on the peaceful use of outer space[262], on the issue of transparency and confidence-building measures in outer space activities[263], on the prevention of an arms race in outer space[264],

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[253] JOHNSON, C., "The UN Group of Governmental Experts on Space TCBMs", *A Secure World Foundation Fact Sheet* [online], 2014. Available in: <https://swfound.org/media/109311/swf_gge_on_space_tcbms_fact_sheet_april_2014.pdf> (Accessed 2 March 2022).

[254] JOHNSON, C., *op. cit.*, footnote 253.

[255] KYRIAKOPOULOS, G. D., *op. cit.*, footnote 182, p. 30.

[256] JOHNSON, C., *op. cit.*, footnote 253.

[257] KYRIAKOPOULOS, G. D., *op. cit.*, footnote 182, p. 30.

[258] JOHNSON, C., *op. cit.*, footnote 253.

[259] KYRIAKOPOULOS, G. D., *op. cit.*, footnote 182, p. 30.

[260] KYRIAKOPOULOS, G. D., *op. cit.*, footnote 182, p. 31.

[261] General Assembly resolution 74/32, *Prevention of an arms race in outer space*, A/RES/74/32, (12 December 2019). Available in: <https://digitallibrary.un.org/record/3846401?ln=es> (Accessed 26 March 2022).

[262] General Assembly resolution 74/82, *International cooperation in the peaceful uses of outer space*, A/RES/74/82, (13 December 19). Available in: <https://www.unoosa.org/res/oosadoc/data/resolutions/2019/general_assembly_74th_session/ares7482_html/A_RES_74_82E.pdf> (Accessed 26 March 2022).

[263] General Assembly resolution 74/67, *Transparency and confidence-building measures in outer space activities*, A/RES/74/67, (12 December 19). Available in: <https://digitallibrary.un.org/record/3846747?ln=zh_CN> (Accessed 26 March 2022).

[264] General Assembly resolution 74/32, *op. cit.*, footnote 261.

on no first placement of weapons in outer space[265] and on further practical measures for the prevention of an arms race in outer space[266]— hint "the problem of weaponisation of outer space" and "the growing interest of the international community in prevention of" a space arms race[267]. It might be precisely this pressure that has driven Chinese and Russian drafters to include, even if not exhaustively, certain mention of TCBMs in the Draft PPWT.

Despite the modest mention of TCBMs in Article VI g) Draft PPWT, which are envisioned as the capacity to collect and distribute information by an illy defined Executive Organisation, it can be inferred that China backs the United Nations resolution on TCBMs although it contends that a binding legal instrument would be a preferable solution. In Chinese words, "TCBMs are neither a substitute for the measures of arms control and disarmament, nor a precondition of implementation of such measures. Neither can TCBMs replace verification measures. However, TCBMs may facilitate work on disarmament commitments and measures of their verification"[268].

On the other hand, initiatives as the ICoC promoted by the European Union contend that "a non-legally binding agreement which covers both military and civilian activity is the right way to proceed"[269]. "The draft International Code of Conduct for Outer Space Activities recognizes the continuing work on PAROS and the proposed PPWT, and provides an assurance to their sponsors that the Code is designed to neither affect nor supplant either of the proposed accords"[270]. In comparison with the Draft PPWT, the ICoC appears to be resistant to the unverifiability critical comments, despite the fact that it lacks a verification process too[271]. Nonetheless, this is largely because its compliance is purely voluntary, and it only applies to behaviours in outer space that result in the damage or destruction of space objects, which are far simpler to detect[272].

Even though the Draft PPWT acknowledges the necessity to adopt measures capable of guaranteeing compliance with the provisions outlined in the Treaty, it fails to arrange or list them and postpones their discussion for a future protocol. Except for the Executive Organisations' power to "collect and distribute information provided as part of transparency and confidence-building measures" no other verification tools are provided[273]. The dearth of verification mechanisms of the Draft PPWT weakens its

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[265] General Assembly resolution 74/33, *No first placement of weapons in outer space*, A/RES/74/33, (12 December19). Available in: <https://digitallibrary.un.org/record/3846402> (Accessed 26 March 2022).

[266] General Assembly resolution 74/34, *Further practical measures for the prevention of an arms race in outer space*, A/RES/74/34, (12 December 19). Available in: <https://digitallibrary.un.org/record/3846403?ln=es> (Accessed 26 March 2022).

[267] KYRIAKOPOULOS, G. D., *op. cit.*, footnote 182, p. 31.

[268] Conference on Disarmament, "Transparency and Confidence-Building Measures in Outer Space Activities and The Prevention of Placement of Weapons in Outer Space", 2006, CD/1778, pp. 1-5, p.1. Available in: <https://digitallibrary.un.org/record/579577?ln=es> (Accessed 4 March 2022).

[269] BIN, L., *op. cit.*, footnote 9, p. 607.

[270] Ibid., p. 607.

[271] SU, J., *op. cit.*, footnote 93, p. 91.

[272] Ibid., p. 91.

[273] Treaty, *op. cit*., footnote 91, Article VI.

compliance and "enhances the risk of violation of its terms"[274]. The Final GGE Report's (2013) proposes that "States and international organisations review, consider, and implement the GGE's TCBMs on a voluntary basis through relevant national mechanisms, to the greatest extent practicable, and consistent with national interests", proposition that the Draft PPWT fulfils mediocrely[275]. Moreover, "a State will have to legally bind itself to the PPWT" with the consequent vagueness before every detail is set in stone[276]. This would offer Russia and China significant legal influence to "back a State into a legal and political corner, all the while enhancing its soft-power base in the United Nations and, specifically, in the Conference on Disarmament"[277].

Although the adoption of TCBMs and recurrent UN General Assembly resolutions on the prevention of an arms race in outer space corroborates the existence of an internationally shared growing concern about "the need for multilateral action on this issue", national security concerns are encouraging certain States to "keep the debate on the placement of weapons in outer space open"[278]. The Draft PWWT could be modified to encompass verifiable primary-level obligations —for instance, in ground-based ASAT testing— although verification of testing and deployment of laser ASATs and dual-use space objects for hostile purposes would remain complex[279]. The lack of verification tools does not only entrench alarming consequences —mainly not effectively preventing the infringement of the Draft PPWT provisions and rendering the Draft deeply debilitated— but sets the spark for distrust towards the Chinese initiative and alienates support from Western nations.

4.3. The major issue of space debris or long-term sustainability of outer space.

As more actors launch and manage space-based devices, fewer orbital pathways and communication frequencies will be accessible[280]. Access to space orbits is ever more complicated by the phenomena of space debris, which is affecting launch systems and the ability to get access to communication frequencies[281].

According to Madeleine Moon, "Space debris, resulting from collisions, defunct satellites, and decades of ill-regulated activities in space, poses a serious problem to space access and use"[282]. In addition, "rising levels of space debris raise the risk of damage to critical infrastructure, varying this damage from the small and repairable to total incapacitation"[283]. Even "very small debris can also potentially destroy satellites" as it

[274] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 44.
[275] JOHNSON, C., *op. cit.*, footnote 253.
[276] LISTNER, M., RAJAGOPALAN, R., *op. cit.*, footnote 139.
[277] Ibid.
[278] KYRIAKOPOULOS, G. D., *op. cit.*, footnote 182, p.35.
[279] SU, J., *op. cit.*, footnote 93, p. 91.
[280] MOON, M., *op. cit.*, footnote 188, p. 4.
[281] MOON, M., *op. cit.*, footnote 188, p. 4.
[282] Ibid., p. 4.
[283] Ibid., pp. 4-5.

occurred with the "small Russian satellite BLITS" which was fragmented in two by a piece of "debris weighing less than 0.08g"[284].

In front of this reality, and due to its severe effects as "the Kessler syndrome, whereby pieces of debris keep crashing into one another, resulting in a cascade reaction creating ever-more and ever-smaller debris, thus fatally contaminating the orbital environment"[285]*;* it seems contradictory that the Draft PPWT —with its comprehensive character ambitions— fails to dedicate some lines in its preamble or an article to tackling this issue. If the Draft PPWT is aimed at securing outer space, the absence of certain regulation on the matter leaves it incomplete.

Arguably, the reason behind might be the limited relevance of space debris and its related perils back in 2014 compared with current awareness. In addition, when deciding about the scope of the treaty, PPWT drafters could have considered that it was preferable to draft a treaty especially dedicated to non-weaponisation of outer space instead of a more comprehensive legal instrument. Space debris, in their opinion, might be an issue which could be best tackled by employing TCBMs or to which a separate treaty should be dedicated.

Nevertheless, if the Draft PPWT was to be ratified nowadays, it could be difficult to justify not dedicating a single mention to the matter. This approach would be contrary to the efforts made in the last years by the international community to promote the long-term sustainability of outer space. If "China's rising space activities were already perceived as reflecting multiple and competing interests of a widening array of stakeholders, reluctant to pay the costs associated with protecting the commons"[286], this omission would not but reinforce this insight.

The ASAT tests result in the generation of space debris directly confronting the path chosen by the international community and making the Draft PPWT condemnable in the eyes of certain States. The use of kinetic ASAT tests creates large amounts of space debris, provoking "widespread, long-term and severe damage" to the space environment[287]. Widespread because of the large extension of the debris, long-term as they are unlikely to decrease in a short span of time by natural decay —omitting that they are removed by cost-effective measures—and severe owing to the grave dangers that posed to orbiting satellites and human space missions[288]. The Popular Republic of China cannot isolate itself from "the ever-intensifying efforts" of the international community to adopt "a holistic approach to promoting the long-term sustainability of outer space activities"[289] .

It is precisely because is well-aware of it that in "China's Space Program: A 2021 Perspective" it is stated that in the next five years, the Popular Republic of China "will

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[284] Ibid., p. 5.

[285] Ibid., p. 11.

[286] BIN, L., *op. cit.*, footnote 9, p. 592.

[287] SU, J., *op. cit.*, footnote 93, p. 83.

[288] Ibid., pp. 83-84.

[289] Paragraph 3, Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee on the Peaceful Uses of Outer Space were adopted in 2019 (A/74/20, para. 163 and Annex II) found in BIN, L., *op. cit.*, footnote 9, p. 594.

continue to expand its space environment governance system and conduct in-orbit maintenance of spacecraft, collision avoidance and control, and space debris mitigation, to ensure the safe, stable and orderly operation of the space system"[290]. Moreover, it contends that "China has strengthened international exchanges on space debris, long-term sustainability of outer space activities, and other issues through mechanisms such as the Space Debris Work Group of China-Russia Space Cooperation Sub-committee and the Sino-US Expert Workshop on Space Debris and Space Flight Safety"[291].

Nevertheless, if the Popular Republic of China aims to be a legitimate rule-maker, at some point it will need to overcome the debate on which International Law establishes "the normative framework" having as central point "the global common nature of outer space whereas national space policies prioritise security and defence strategies, as well as the commercial profits deriving from its exploitation"[292].

4.4. Conclusion on the limitations of the Draft PPWT.

The identified limitations together with the reduced added value of the Draft PPWT render the legal instrument unable to cope effectively with current challenges —not to mention future ones—.

Even if the three main problems —co-orbital armed satellites, non-destructive and covert methods and, dual-use technology— along with the incapacity to address direct-ascent anti-satellite systems are partially attended by the Draft PPWT, the scale of the problem requires more ambitious initiatives than short-sighted solutions. The Draft PPWT only prohibits the use of such space objects for hostile purposes as well as their conversion for such objectives—not their research, development, etc.—, ignoring how difficult it is detecting whether a conversion has been made to such objects into space-based ASAT systems.

Furthermore, the Draft PPWT is naïve in conceiving that States will change their natural tendency to apply the rules arbitrarily and to interpret its broad and ill-defined clauses in the most favourable light. Thus, the exclusion of ground-based ASATs is highly detrimental as it overlooks that a significant —and increasing— number of States possess them and underestimates the possibility of their deployment in the event of a conflict. Lamentably, the Draft PPWT is evidence of the still rampant realist theories by not attempting to safeguard the global commons dimension of outer space and allocating instead its co-sponsors national strategies and interests in a predominant position[293]. The Popular Republic of China has a twofold dilemma: on the one hand, to behave as a true rule-maker and ensure respect for the global commons, or on the other hand, to give priority to its national interests.

The problems that the Popular Republic of China faces are not confined to these, there is also a significant verification issue with the implementation of its normative initiative.

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[290] The State Council Information Office of the People's Republic of China, *op.* cit., footnote 25, p. 9.
[291] Ibid., p. 16.
[292] BIN, L., *op. cit.*, footnote 9, p. 594.
[293] BIN, L., *op. cit.*, footnote 9, p. 594.

Certainly, there exists an overall unwillingness among the international community for the adoption of verifications mechanisms. Regardless of whether these intrusive approaches were up to the task, spacefaring governments would be unlikely to adopt them due to the high level of confidentiality and sensitivity of space activities. Thus, it is not surprising that owing to the hindrance that verification represents —in political and technical terms—, existing initiatives on the prevention of outer space weaponisation either postpone the matter for future discussion —the Draft PPWT— or avoid primary-level commitments that are difficult to verify[294]. The Draft PPWT fails to fulfil the criterion of "effective verification" and arguably, the data exchange consisting of yearly statements about States Parties outer space policies and strategies is not commensurate with the scale of the problem at hand. Moreover, the vagueness of the Draft PPWT verification mechanism entail alarming consequences, such as the risk of being legally bound by clauses whose scope of obligations is unknown. This Section has perfectly exemplified that despite the adoption of TCBMs and recurrent UN General Assembly resolutions on the prevention of an arms race in outer space, national security concerns are prevalent over the necessity to take multilateral action and encourage keeping the placement of weapons in outer space unresolved.

If this is the trend, it would be innocent to think that States contemplate as a priority the promotion of the long-term sustainability of outer space. There is plenty of evidence regarding the raising perils that space debris generate concerning launch systems and the ability to get access to communication frequencies[295]. Besides, the execution of ASAT test is highly detrimental as it creates large amounts of space debris, provoking "widespread, long-term and severe damage" to the space environment[296]. Therefore, if the space activities of the Popular Republic of China were already perceived as reluctant to pay the costs associated with protecting the commons, the omission of outer space sustainability on the Draft PPWT would not but reinforce this insight. Until Chinese rising space activities are perceived as disruptive rather than constructive to outer space governance, it is highly unlikely that it will achieve the international status of a responsible rising power. The real dilemma for China is whether to try to present itself as a rule-maker and pursue the global good —not without a high degree of effort— or to continue to be considered a free rider.

[294] SU, J., *op. cit.*, footnote 93, p. 88.
[295] MOON, M., *op. cit.*, footnote 188, p. 4.
[296] SU, J., *op. cit.*, footnote 93, p. 83.

5. NORTH ATLANTIC TREATY ORGANISATION'S OPTIONS.

Back in 2018, the seed for a North Atlantic Treaty Organisation Space Policy was planted as NATO Leaders acknowledged that "space is a highly dynamic and rapidly evolving area, which is essential to a coherent Alliance deterrence and defence posture [...]"[297] and agreed to develop a policy for that area. In 2019, NATO Member States announced that outer space would become "an operational domain for NATO, recognising its importance in keeping us safe and tackling security challenges, while upholding international law"[298]. In front of these declarations, it seems more than appropriate to contemplate how the normative power of the Popular Republic of China in outer space, and more specifically the Draft PPWT initiative, affect the Alliance's space policy and the options it should consider in this regard.

In NATO's official documents dealing with outer space, it is clearly stated that, while the Alliance is an important forum for Member States to share information, increase interoperability and coordinate actions; the Alliance does not aim to develop space capabilities of its own, relying on the Allies' national programmes or space assets[299]. Moreover, it claims that its approach to space will remain fully in line with International Law and that it has no plans to launch weapons into outer space[300].

Unfortunately, it seems that Alliance's prospective enemies have decided to adopt an approach which relegates compliance with International Law to a second place. In the sight of this complex scenario, while NATO undertakes the necessary actions to enhance resilience, safeguard critical assets and deter hostile action, it will have to advocate for the peaceful use of outer space, which in respect of the Draft PPWT can take the form of three differentiated courses of action: to maintain the statu quo, to formulate proposals for amendments to the current Draft PPWT and to elaborate its own normative proposal[301]. In the present Section each of them will be evaluated, weighting its possible benefits and perils for the North Atlantic Treaty Organisation and its Member States.

5.1. To maintain the statu quo: Advantages and drawbacks.

The stalemate that the outer space governance has suffered in the last years, especially in the area of space security and arms race prevention, entails certain advantages and drawbacks that the Alliance needs to assess in order to decide whether the most beneficial scenario is preserving the statu quo as well as the dynamics emanating from the existing institutions and legal frameworks regulating this domain.

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[297] North Atlantic Treaty Organisation. *Brussels Summit Declaration* [online]. 11th of July 2018, para. 19. Available in:<https://www.nato.int/cps/en/natohq/official_texts_156624.htm> (Accessed 3 May 2022).
[298] North Atlantic Treaty Organisation. *London Declaration* [online]. 3rd of December 2019, para. 6. Available in: <https://www.nato.int/cps/en/natohq/official_texts_171584.htm> (Accessed 3 May 2022).
[299] North Atlantic Treaty Organisation. *NATO's approach to space* [online]. 2nd of December 2021. Available in: <https://www.nato.int/cps/en/natohq/topics_175419.htm> (Accessed 3 May 2022).
[300] North Atlantic Treaty Organisation, *op. cit.*, footnote 299.
[301] SLAPAKOVA, L., OGDEN, T. V., BLACK, J., *op. cit.*, footnote 183, p. 197.

Even if the current scenario languishes several unresolved uncertainties and does not effectively guarantee international security, existing advantages need to be considered. As the impediments for the weaponisation of outer space are limited and probably will be soon outdated, there are scant constraints for the development of military means, therefore ensuring one of NATO's main objectives "deter and defend against threats to or attacks on Allies' space systems"[302]. The existing ambiguity and ill-definitions also ensure that the Allies enjoy room for manoeuvre in what regards to its training and exercises so as NATO forces are "prepared to operate when space support in operations is degraded, denied or disrupted"[303]. Among the Allies, the United States has created the U.S. Space Force and re-established the U.S. Space Combatant Command both conferred with the mission to protect American space assets; France has created its own military space command and other Member States, such as the United Kingdom and Australia are contemplating to imitate their peers[304]. Unquestionably, NATO's declaration of outer space as an operational domain in 2018 London's Summit sheds light on the relevance of space for international security purposes and the increasing risk of conflict taking place in space. Despite of certain punctual events —mentioned in Section two and four—, the current statu quo has ensured the well-functioning of satellite communications whose "positioning, timing and navigation is essential in all NATO missions" and "it enables precise positioning and allows for the synchronisation of efforts across the full spectrum of military operations"[305].

The current Draft PPWT by mentioning "non-governmental legal entities" it already achieves to put into the spotlight, at least in their initial phase, New Space companies —which are expected to flourish exponentially in the following years—. From rocket manufacture to satellite operations, and from ground infrastructure to service providers, the private space business has developed practically across the entire industry chain[306]. Certainly, as commercial space enterprises grow in number and relevance, national policies will be required to regulate the activities of these private actors —leading to more favourable policies and governing measures—. Thus, it could be said that it opens the debate and recognizes that the rise of non-state actors will entail the search for answers in what regards to "public-private coordination in the event of signal interruptions, security guarantees against cyber-attacks on a private satellite containing personal data of citizens from a certain country, how to ensure transparency in equipment interoperability, or how a collective response"[307]. However, the Draft PPWT fails to foresee that the role of State Governments in space activities will gradually shift from the main rule-making and supervision authority to a more cooperative and open role[308].

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[302] North Atlantic Treaty Organisation. *NATO's overarching Space Policy* [online]. 2022. Available at: <https://www.nato.int/cps/en/natohq/official_texts_190862.htm?utm_source=linkedin&utm_medium=nato&utm_campaign=20220117_space> (Accessed 30 March 2022).

[303] North Atlantic Treaty Organisation, *op. cit.*, footnote 302.

[304] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 58.

[305] North Atlantic Treaty Organisation, *op. cit.*, footnote 302.

[306] LU, Z., *op. cit.*, footnote 41, pp. 524-525.

[307] JORGE, R., "Outer space: the new horizon on EU's strategic autonomy", *Real Instituto Elcano* [online], 2022. Available in: <https://www.realinstitutoelcano.org/en/outer-space-the-new-horizon-on-eus-strategic-autonomy/> (Accessed 30 March 2022).

[308] LU, Z., *op. cit.*, footnote 41, p. 525.

On the other hand, the changing balance of power —from bipolarity to multipolarity— and the increasing presence of a larger number of States —not just pertaining to the Western world, also from Africa, Latin America, Asia, the Caribbean, and the Arabian Peninsula[309]— has deeply modified the current outer space scenario. Concretely, at this precise moment at least eleven States and one international intergovernmental organisation —the European Space Agency (ESA)— own independent launch capability, while over sixty countries or government consortia own or operate active satellites[310]. Thus, the impressive proliferation of actors, undertakings and capabilities have decreased the preparedness of the present legal framework to the current scenario. The maintenance of the statu quo involves the delay of substantive and structural reforms, which are soon to be demanded by those emerging actors who aim to have a say, but conversely, by those powerful actors as NATO who will see their interests menaced by the activities of the former.

Moreover, the continuation with the contemporary statu quo enables the Popular Republic of China and the Russian Federation to continue using lawfare to its advantage —and as part of a broader strategy—. In conjunction with the Draft PPWT, the co-sponsors also submitted first, a resolution on "No first placement (NFP) of weapons in outer space" (69/32) —which has been minimally amended and submitted to the UN General Assembly repeatedly since 2014— and second, a resolution on "Further practical measures for the prevention of an arms race in outer space" (72/250) —which is also allocated on the UN General Assembly agenda every year since 2017 with marginal alterations—[311]. Having these resolutions passed on a regular basis allows Beijing and Moscow to re-emphasize their positions and compel Washington to open discussions on a treaty on outer space non-weaponisation[312].

By presenting recurrent initiatives related with outer space weaponisation in the CD and possible future updates on the Draft PPWT, Beijing and Moscow may end gaining the support of emerging States, be it by their compelling hard law approach or because they exercise certain degree of leverage or pressure as they are the launching state of those States. Besides, Beijing and Moscow are fully aware of the fact that by presenting new proposals or discussing thoroughly the Draft PPWT, they are elaborating on the conceptual framework for future negotiations as well as preventing that other initiatives or views that endanger their interest have a say on international forums.

In addition, the current legal framework does not prevent potential adversaries from "developing, testing and operationalising sophisticated counter-space technologies that could threaten Allies' access to, and freedom to operate in space"[313]. Indeed, adversaries are developing technologies that "comprise a diverse range of counter-space capabilities to disrupt, degrade, deceive, deny or destroy capabilities and services on which the Alliance might critically depend" and which presumably, by their sophistication and advance-guard nature, are hardly going to be covered[314]. Therefore, the existing legal

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309 JORGE, R. *op. cit.*, footnote 307.
310 SU, J., *op. cit.*, footnote 93, p. 61.
311 JULIENNE, M., *op. cit.*, footnote 13, p. 37.
312 Ibid., p. 37.
313 North Atlantic Treaty Organisation, *op. cit.*, footnote 302.
314 North Atlantic Treaty Organisation, *op. cit.*, footnote 302.

framework does not prevent the further development of more sophisticated and accurate weapons, nor the fall in the security dilemma warned by John H. Herz.

The security dilemma will occur in all its splendour as a large number of the projects and satellites launched into outer space are dual-use systems. Incertitude is concomitant with their double nature; hence, outsiders' feelings of insecurity, distrust and concern will be exacerbated precisely because of the lack of clarity regarding the capabilities of those objects, triggering the rearmament of the rest. Further to this, according to LIGOR et al. "the possibility of a terrestrial conflict extending into space or a conflict beginning in space is becoming increasingly real" and it is aggravated by "the lack of a mature governance system for space"[315]. A weak space regime encourages these addictive-like hostile behaviours worsening an "already unstable space environment"[316].

To conclude, the existing ambiguity and ill-definitions ensure that spacefaring nations enjoy room for manoeuvre in regard to their outer space national security training and exercises —with the consequent risks that it entails—. It seems that authoritative Governments and influential non-governmental actors have become diplomatically, strategically, commercially, and operationally addicted to the intrinsic vulnerabilities of the current five-treaty regime[317]. However, standing idly by would mean to leave the international community at the mercy of China's egoistic interests without none fighting for the benefit of the entire humanity. Moreover, not presenting amendments nor a parallel initiative would imply that there is no other option but the Draft PPWT. The Popular Republic of China would be in a predominant position as it would have effectively narrowed the conceptual framework for negotiation and of the overall regime. Arguably, even if the Draft PPWT is a limited solution and not the ideal one, it compromises to a lower degree international peace and security that what it would a full-scale arms race in outer space, which is bound to occur in the *laissez-faire* scenario[318]. The maintenance of the statu quo is a short-medium-term course of action which poses some advantages and disadvantages that have to be weighed, but whose alteration is just a question of time.

5.2. To formulate proposals for amendments to the current Draft PPWT.

The second option that the North Atlantic Treaty Organisation should consider is to, once analysed the content and the possible handicaps of the Draft PPWT, formulate proposals for amendments so as to align it with Member States preferences.

Throughout Sections three and four of the present research, it has been possible to appreciate the nuances of the Draft PPWT that still need to be improved as well as the multiple deficiencies that hinder its effectiveness when it comes to ensure international security in outer space.

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315 LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 59.
316 Ibid., p. 59.
317 Ibid., p. 63.
318 SU, J., *op. cit.*, footnote 93, p. 93.

First of all, the preamble of the Draft PPWT should at least allude to the right to explore and to the use of outer space for peaceful purposes so as to be in harmony with NATO's space policy's principles and tenets. In addition, it could be advisable to mention and express the commitment of spacefaring nations to the non-generation of space debris and to the long-term sustainability of outer space.

Secondly, regarding the definitions contained therein, the term "weapons in outer space" should be revised so as to encompass the research, development, testing, production, storage, or deployment of ground-based devices capable of assaulting space objects. However, this comes with a downside as, if ASAT systems are forbidden it would also affect those State Parties who have interests on their development, storage and usage. Connected to it, the definition of the terms *use of force* and *threat of force* overlooks the indication of the threshold of seriousness below which a use of force is not comprehended, thus not preventing the clear identification of malicious actions taken in the *grey zone* and enabling hostile actors to "probe NATO's defences and political resolve in this new operational domain, while trying to avoid triggering a full Article 5 response from the Alliance"[319].

Thirdly, concerning its substantive dispositions, Article II of the Draft PPWT is in need of deep alterations as with the current differentiation among States Parties and non-States Parties, outer space objects pertaining to non-States Parties are left open to interference[320]. This is certainly unacceptable. In addition, while the Draft PPWT clearly leaves research and development of terrestrial-based ASAT systems unrestricted, testing is also likely unrestricted, as testing is typically aimed against a State's own satellite[321]. Articles III and IV of the Draft PPWT leave unresolved the type of activities that States Parties can legitimately undertake in self-defence and which are the limitations and due duration of those acts. If the Articles are left with the current wording, it lacks value for NATO as it does not prescribe the principles and conditions under which this right could be exercised nor clarify its applicability. Article V of the Draft PPWT fails to arrange concrete verification methods and TCBMs, not effectively preventing the infringement of the provisions therein. Thus, NATO should propose feasible verification mechanisms and TCBMs in order to not render the Draft worthless. Besides, the Alliance could also suggest a simplified amendment procedure for the to-be-proposed verification mechanisms so as to prevent them from falling behind the rapid development of new technologies in this domain. Article VI of the Draft PPWT shortfalls of details on the "establishment, composition and operating procedures" of the Executive Organisation and, while it is not the most relevant matter, NATO should also provide some brushstrokes on them. As a matter of fact, the Executive Organisation could play a prominent role in regard to the implementation of TCBMs.

Fourthly, on the subject of procedural dispositions, Article VII of the Draft PPWT does not grant the Executive Organisation with enforcement authority and when it is unable to settle the dispute or eliminate the breach, bringing the case to the attention of the UN General Assembly or the UN Security Council is the *ultima ratio.* Certainly, it is an insufficient solution when outer space is increasingly contested, congested and

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[319] SLAPAKOVA, L., OGDEN, T. V., BLACK, J., *op. cit.*, footnote 183, p. 186.
[320] LISTNER, M., RAJAGOPALAN, R., *op. cit.*, footnote 139.
[321] SU, J., *op. cit.*, footnote 93, p. 74.

competitive, being disputes likely to arise. In order to enhance its efficiency and broaden its legitimacy, NATO should propose to include in the Article the applicability of the Permanent Court of Arbitration Optional Rules for Arbitration of Disputes Relating to Outer Space Activities.

Negotiations among Member States on every single proposal formulated to the current Draft PPWT are a must and a holistic approach is essential. The development of a shared awareness on the potential perils that outer space involves and the exploration of strategic collaboration are crucial while continuing to update the existing rules of International Law governing space activities[322]. Indeed, the Alliance needs to foresee whether the proposed amendments will have a significant impact, whether they are beneficial to Member States and whether, should the interests of Members change in the future, the proposed amendments will not constitute a setback. The North Atlantic Treaty Organisation cannot repeat the Popular Republic of China's blunder, so its suggestions must be capable of encouraging pluralism and cross-cutting consensus. Further to this, the proposed amendments have to be carefully presented as they need to enjoy the support of the rest of the international community and be perceived as legitimate by most actors.

However, the situation is not as simple as proposing some alterations in the current wording of the Draft PPWT due to the existing underlying implications. By devoting time and efforts to proposing them, collaterally, the Draft PPWT would "take the spotlight off the International Code of Conduct for Outer Space Activities and the effort to utilise TCMBs in the Group of Governmental Experts to address outer space security issues"[323]. To make proposals would imply a reduction in the potential and future prospects of the ICoC or even a refusal of the same, proclaiming the Popular Republic of China as a true rule-maker on outer space governance. In addition, if the overlapping membership of the North Atlantic Treaty Organisation and the European Union are taken into consideration, it is hard to believe that the Alliance would support the initiative presented by its nemesis rather than to express its support for an initiative that "stemmed from a document proposed by the European Union"[324]. These reflections are reinforced by the fact that NATOs' space policy document announces that it will "engage with selected partners and relevant international organisations [...] on space and space-related aspects" expressly mentioning the European Union and the United Nations[325]. Still, it is not as straightforward as it seems since, inside the Alliance, not all Member States agree on the virtues of the ICoC —having the United States expressed its reluctance publicly—.

Amending the Draft PPWT would closely connect NATO with the overall process and affect its political power. States outside the Alliance, which might or might not have interests in outer space, may have confidence in the good judgement of NATO and follow its lead. As a consequence, if the proposed amendments or the Draft PWWT initiative do not come to fruition —be it because of reckless fluctuations in the desires of its co-sponsors or their ambitious demands—, NATO's political leverage and credibility might

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[322] MOON, M., *op. cit.*, footnote 188, p. 11.

[323] LISTNER, M., RAJAGOPALAN, R., *op. cit.*, footnote 139.

[324] JOHNSON, C., "Draft International Code of Conduct for Outer Space Activities Fact Sheet", *A Secure World Foundation Fact Sheet* [online], 2014. Available in: <https://swfound.org/media/166384/swf_draft_international_code_of_conduct_for_outer_space_activities_fact_sheet_february_2014.pdf> (Accessed 25 February 2022).

[325] North Atlantic Treaty Organisation, *op. cit.*, footnote 302.

be effectively diminished. The failure to reach an agreement may also have negative effects on the hopes and willingness of the international community regarding the widening of the international legal regime on outer space, considering this undertaking a hopeless case.

Arguably, supporting the Draft PPWT by proceeding to its amendment, would also entail implications on the much deeper debate between soft law and hard law. As it has been explained, hard law provides trustworthy pledges, diminishes transaction costs and improves enforceability, whereas soft law has the potential to reduce contractual costs and sovereignty costs[326]. Soft law instruments are also devoid of the constitutional and other domestic legal constraints that most democracies impose on treaty ratification, and they can persuade a reluctant State to join[327]. Due to the possible repercussions in the national security area, States have been reluctant to sign a legally binding document that compromises their agency to defend their space assets or militarily intervene in outer space. Jinyuan Su argues that where powerful States disagree on policy, they are likely to "engage in forum shopping in such situations, advancing their interests by pressing for the adoption of legal provisions, both hard and soft, in forums that are most favourable to their respective positions"[328]. As the negotiations of a novel treaty regulating space-related activities have been in a stalemate, the international community has preferred to support the evolution of the regime through non-binding legal instruments, such as the ICoC. The interaction between soft law and hard law in all likelihood participates in the rise of soft law use[329]. However, this scenario would change radically if NATO would position itself in favour of a legally binding instrument as the Draft PPWT.

To conclude, the formulation of amendments to the Draft PPWT, as simple as it might appear due to the clear identification of its weaknesses, entails complex consequences which once those alterations are presented cannot be removed. Between them, the reduction in the potential and future prospects of the ICoC or the adjustment of the balance in favour of the hard law approach. In addition, the waste of precious resources —for instance, time, expertise or political leverage— on attempting to solve them would benefit the Popular Republic of China, who would emerge as a newly proclaimed rule-maker in this domain.

5.3. To elaborate its own normative proposal: Advantages and drawbacks.

In many important aspects, outer space remains largely ungoverned, putting States and their security, economic and social interests, at jeopardy[330]. Furthermore, its relevance as well as the dependency on it is expected to increase, making it even more pressing to find a durable solution to the existing situation. The solution in question does not necessarily

[326] SU, J., *op. cit.*, footnote 93, p. 85.
[327] Ibid., p. 85.
[328] Ibid., p. 86.
[329] Ibid., p. 85.
[330] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 54.

have to be a "Hobbesian Leviathan" but a feasible and circumscribed instrument may suit the international community[331].

As past experiences deriving from nuclear tests bans have demonstrated, a step-by-step approach might be the most plausible option for a problematic fraught with technical complexities of verification as is the prevention of weaponisation of outer space[332]. Even if a comprehensive ban on space weapons is desirable, with currently existing technologies only the "prohibition of testing, deployment, and use of dedicated space-based weapons and kinetic terrestrial-based ASATs are verifiable", thus, uncertainty plagues verification of laser ASATs and "the misuse of dual-use space objects for hostile purposes"[333].

The Allies are in a privileged position to elaborate a "robust rule of law system" for outer space as first, they conform a group of like-minded entities which support "collective and deliberative decision-making regimes" and second, it is estimated that around 50% of all satellites in service pertain to them[334]. On the one hand, NATO Member States could decide to create an additional protocol to the existing NATO foundational Treaty or draft a new treaty where the governing rules of outer space are established. They could first limit it to a less ambitious target, such as debris removal, so as to verify if it is an effective measure and subsequently tackle the testing and deployment of weapons in outer space and of ground-based kinetic ASATs. Because weapons in outer space do not give effective deterrent to laser ASATs, the non-prohibition of laser ASATs and the misuse of dual-use space objects should not preclude the prohibition of weapons in outer space[335]. In case it comes to be successful, a spill-over effect would be desirable in the areas to be tackled as well as in the number of participants of the regime contributing to a more secure space for the entire international community.

On the other hand, Allies by agreeing to commit themselves through TCBMs or other soft law instruments, could emerge as "a centre of gravity" for space governance[336]. Arms control is one of the most effective, but not the only, means of safeguarding international peace and security. As Jinyuan Su explains it "TCBMs can reduce the risk of miscalculation and misinterpretation. And, ultimately, it is co-operation, rather than legal constraints, that is the panacea for long-lasting international peace and security"[337]. Certainly, they could encourage the formation of standards of behaviour and overall norms. As from these norms of behaviour some benefits are expected to derive, the possibility of other actors and even adversaries deciding to abide by the rules is not nonsensical.

Among those benefits, the communications between New Space companies and States could be reinforced while assisting nations in aligning their agendas in order to provide the advantages of space to the whole international community. The cooperation in

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[331] Ibid., p. 65.
[332] SU, J., *op. cit.*, footnote 93, p. 93.
[333] Ibid., p. 93.
[334] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 65.
[335] SU, J., *op. cit.*, footnote 93, p. 93.
[336] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 65.
[337] SU, J., *op. cit.*, footnote 93, p. 93.

transparency —which would entail pooling their satellite data— could facilitate the mitigation of collision-risk as well as the development of space situational awareness[338]. Besides, the biggest benefit would be disassociating safety issues from security issues and focusing on near-term gains for all[339]. Notwithstanding, this is a complex process which will require in-depth analysis of the approaches taken in other domains —which have achieved to "encouraged more-efficient use and stewardship of common-pool resources"— so as to learn from them and apply them to the area that concerns us[340].

Implementing an initiative of this calibre would not be exempt from costs and efforts. Drafting a legal instrument that has to meet such high demands is prone to require the deployment of large resources. It will require an exercise of analysis on which constitutes the priorities of NATO —and from its Members individually— regarding space governance and international security needs to be conducted. In addition, deep knowledge on International Law and expertise on legal assessment concerning the most appropriate phrasing to meet the interests of the Allies will be a must. Also, the time devoted to recurrent meetings has to be taken into account as meanwhile other matters are relegated to a second place.

Frictions among NATO's Member States are likely to arise as they might have differing visions on the issue and they respond to different constituencies. Indeed, their interests on outer space and the capacities to pursue them —or the lack of both— might be poles apart. The new initiative would encounter the unwillingness of some Allies —which already committed to support the ICoC under the European Union umbrella— to embark in another regulating endeavour in outer space. They might prefer to deploy new resources in strengthening the deficiencies that the ICoC endures —not addressing adequately the deployment of weapons in outer space, the testing and use of space-to-Earth weapons[341], the dual-use issue[342] nor lacking a verification regime[343]— rather than starting from scratch with another project. Indeed, the development of a new proposal would imply a reduction in the potential and future prospects of the ICoC or to condemn it to its failure. As it has been mentioned, NATO intends to engage with selected partners among which the European Union stands in a preferential position. Thus, creating a new instrument would undoubtedly be at odds with this approach, although all State Members do not share that belief. Henceforward, the negotiations to achieve a choral voice are likely to request time but above all a great deal of political will.

The timing and opening of the hypothetical presentation of the initiative are also crucial. It needs to be presented in a favourable moment when the Allies are capable of gathering the needed consensus among the international community, otherwise NATO's political leverage will be seriously diminished, endangering the success of future projects. Still, this is a factor at the mercy of Member States' interests —requiring unity from them—.

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338 LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 66.
339 Ibid., p. 66.
340 Ibid., p. 67.
341 SU, J., *op. cit.*, footnote 93, p. 76.
342 Ibid., p. 84.
343 Ibid., p. 91.

If the upcoming initiative aims to be a success, it needs to be perceived as representing and encompassing the interests of the international community as a whole, and not just those of the Allies. The failure to protect the global good and materialise the current principles governing outer space would mean to present a biased instrument which would expose the Organisation to the same criticisms that it professes to the legal instrument co-sponsored by Beijing and Moscow.

Therefore, this is the most hazardous out of the three proposed courses of action as first, the Organisation's objectives, its interests, and its mission need to be thoroughly reflected upon beforehand. Second, it could contribute to further distancing the positioning between those actors who support that the hard law approach is the most appropriate one for outer space governance and those who contend precisely the opposite. Third, it entails the possibility of creating grievances between the Allies and arduous negotiations are more than expected. Last, the only certainty about this option is that it requires a great deal of resources to ensure it comes a long way.

5.4. Conclusion on NATO's options.

The way to proceed in front of this uncertain scenario is not unique as it has been proved, having NATO to assess the possible options and choose wisely. The present Section has not attempted to find a solution nor to dictate what NATO should do in respect of the instauration of the rule of law in outer space. Rather, it has aimed to constitute a dialectical exercise where the advantages and disadvantages of NATO's most evident options in relation to the Draft PPWT were widely discussed.

Firstly, the option in favour of the maintenance of the statu quo permits the Allies to continue with the development of military means and ensuring NATO's main objectives. Conversely, these scant constraints do not forbid its adversaries to operationalise sophisticated counter-space technologies endangering international security and not preventing the security dilemma from arising. Moreover, by perpetuating the current statu quo the risk of Beijing and Moscow gaining the support of developing States increases. Even if the current statu quo manages to give an initial response to the increasing number of private actors undertaking projects in outer space, their ambition and willingness to have a say are bound to have an impact in the transformation of the existing framework. Therefore, it could be argued that this option is a short-medium-term course of action as the statu quo's alteration —due to the upcoming trends— is just a question of time.

Secondly, the formulation of proposals for amendment of the Draft PPWT, despite these flaws being well identified —regarding its preamble, definitions, substantive dispositions and procedural dispositions—, entails far-reaching consequences whose severe effects are difficult to predict. The proposed alterations need to be drafted in such a way where the interests of the Member States as well as those of the international community are protected, conferring the alterations with certain legitimacy. The proposal would certainly relegate the ICoC and the efforts to utilise TCMBs in outer space to a second place, an outcome that NATO will not permit due to the long-standing and well-established partnership with the European Union. Moreover, this proposal could portray the Alliance as aimless and, if it does not come up roses, it could betray the confidence of other States

in its good judgement —affecting its leadership too—. Last, this possibility could tip the balance in favour of the hard law approach rather than the soft law approach as well as proclaim the Popular Republic of China a rightful rule-maker in this domain.

Thirdly, the elaboration of its own normative proposal is the riskiest although is not as detrimental as the second option. This alternative could provide some advantages as from the formation of standards of behaviour benefits are bound to derive, benefits which will persuade other actors and even adversaries of the convenience of abiding by the rules. Moreover, it could contribute to enhancing communications between New Space companies and States, to strengthening cooperation in transparency facilitating the mitigation of collision-risk, to disassociating safety matters from security matters and focusing on near-term gains for all. Notwithstanding, it will require a deep introspection exercise from the Alliance as well as from Member States before the start of the negotiations where frictions among the Allies are certain to arise. Again, the main perils of pursuing this course of action are the loss of political leverage, waste of limited resources, fragmentation among the Member States, lack of legitimacy and recognizing once for all the main impediment for a full-fledged outer space governance is the absence of political will.

Definitely, instaurating the rule of law in outer space is complicated due to the countless challenges to be faced —the numerous interests as well as the wide range of actors involved—. Nonetheless, the best solution to handle a congested, contested, and competitive environment would be, in the words of Thomas Hobbes, to elaborate a social contract where actors would agree to abide by some rules so as to ensure their security and prosperity[344].

It is blatantly evident that outer space will play an essential role in the near future; however, the recent activity, positioning and rhetoric of certain space powers puts into question if there exists enough political will to put short-term self-interests aside and centre on the collaborative international solutions proposed above to secure long-term international security.

[344] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 67.

6. CONCLUSION.

1. Throughout the previous pages, the relevance of outer space and dependence on the same has been more than established. In an environment susceptible to the state of nature, durable security cannot be assured and not even the dominant actors are free from hazard —as even the feeblest actor, either by secret machination or alliance with others, has the capacity to severely affect them—[345]. In order to remedy this unworkable situation, some type of internationally accepted rule of law system should be conceived[346].

2. The Popular Republic of China has identified outer space as a crucial area where it can give free rein to its great power ambitions and unleash its lust for supremacy[347]. Outer space, apart from being the ideal domain for gaining on international prestige and reinforcing national pride, has also been found to be a strategic field where China is compelled to reduce the competitive and technological gap that separates it from its main competitor —the US— and where the vulnerabilities of the latter need to be identified[348]. Indeed, along this research it has been concluded that space competition among Beijing and Washington is just a reflection of the wider picture of their relationship and the dynamics prevailing therein. Thus, as long as outer space is a relevant component for achieving global power, the contest in this domain between both actors is likely to continue.

Now that the Popular Republic of China is an internationally recognised space power, and in face of the United States decision to go its own unilateral way, it seeks to use international space legislation to its advantage[349]. Indeed, it is clear from the present work that China's legal warfare strategy is to influence international treaty law by taking a leadership role, which is not always in contraposition to the United States but rather aiming to substitute the latter[350]. Because the US is unlikely to join the ICoC, the Draft PPWT stands out as the other initiative aiming to fulfil the legal loopholes left by the Outer Space Treaty regime, making even more pressing Draft PPWT's study and analysis.

3. The conclusions extracted from Draft PPWT's analysis are appalling. The Draft fails to convey an evolution on the mindset of its co-sponsors and evidences China's astropolitik approach. The pursuit of a "re-conceptualized security and benefit from outer space activities in the spirit of common interests" is missed[351]. Besides, there would be few actors who would not be aware of the Drafts' supportive character of Chinese expansionist aims and of the conspicuous absence of verification mechanisms. Certainly, the Draft PPWT is a confirmation of the existing rivalry of major powers on systems and rules.

Regarding its added value as *lex specialis*, it comes as no surprise to affirm that it is certainly limited. The definitions on which the text is based are incomplete, the

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[345] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 65.
[346] Ibid., p. 65.
[347] HILBORNE, M., *op. cit.*, footnote 8, p. 9.
[348] JULIENNE, M., *op. cit.*, footnote 13, p. 40.
[349] JULIENNE, M., *op. cit.*, footnote 13, p. 6.
[350] WHITE, B. A., *op. cit.*, footnote 52, p. 30.
[351] BIN, L., *op. cit.*, footnote 9, p. 594.

prohibitions prescribed for State Parties do not help in the last instance to guarantee the security of space objects and the mention of Article 51 of the UN Charter languishes several unresolved misgivings. Moreover, it fails to propose verification mechanisms as well as to prioritise TCBMs instead of discursive diplomacy and it blatantly delays the outlining of the Executive Organisation. But first and foremost, the Draft PPWT fails to effectively deal with the limitations that have been identified and covered during this research.

4. The section devoted to the limitations of the Draft PPWT has succeeded in meeting its objectives —to dwell on their explanation, argumentation and analysis—, giving rise to reflections such as the following.

The incapacity to address direct-ascent anti-satellite systems, as explained, obeys to the strategic and defence policies of the co-sponsors of the Draft PPWT. Thus, it allocates national defence strategy and interests in a predominant position in respect of the protection of the global commons dimension of outer space. The realist paradigm endures as the main conduct of the most relevant spacefaring nations —and certainly of the Popular Republic of China and the Russian Federation—, enabling this dearth of space norms the formation of opportunities for space weaponisation[352]. Admittedly, it comes as a poor decision to turn a blind eye to the fact that there is a proliferation of actors who own this kind of weapons and consequently, on the higher risk of their deployment in the event of conflict[353].

5. The lack of a mature governance system for space together with the growing number of spacefaring nations and companies, the higher risk of collisions, and growing risk of conflict, transmits everything but tranquillity[354]. Along the previous lines, it has been illustrated the enormous complexity affecting this domain and why it is so difficult to progress on the development of norms of behaviour for outer space and specially giving a response to ensuring its long-term sustainability"[355].

The large number of different types of weapons —ASAT systems, co-orbital attack capabilities and dual-use weapons— and their different characteristics make the non-weaponisation of outer space a real headache. A comprehensive treaty is doomed to disaster if it is to provide an efficient response to this problem, as the means to verify compliance are currently lacking.

6. Although the ASAT systems test has covered most of the debate and is the main criticism that the Draft PPWT suffers, the reality is that "space warfare is more likely to involve the denial of vital information flows supporting command and control of an enemy's forces, rather than the exoatmospheric destruction of its space-based assets"[356]. However, this does not mean that in view of proposing an initiative that truly aims the achievement of non-weaponisation, their testing, research, development etc. should not be prohibited. Moreover, proposing a Draft Treaty that is incapable of limiting the use of

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[352] PRAˇZA´K, J., *op. cit.*, footnote 4, p. 403.
[353] TRONCHETTI, F., HAO, L., *op. cit.*, footnote 1, p. 40.
[354] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, pp. 58-59.
[355] WEEDEN, B., SAMSON, V., *op. cit.*, footnote 136.
[356] MOON, M., *op. cit.*, footnote 188, p. 7.

these new strategies as well as those of the boldest ones —ground-based ASATs—, is a resounding mistake, as is the Draft PPWT.

7. Considering current technical feasibility and the meaningful strategic advantages received from wrongful behaviours, verification appears to be required for the management of conventional weapons in outer space and ground-based ASATs. The drafters seem to acknowledge that the Draft PPWT fails to fulfil the *criterion of effective verification*, being incapable of detecting a militarily significant violation in time to respond effectively and to deny the violator the benefit of the violation[357]. The dearth of verification mechanisms of the Draft PPWT weakens its compliance and increases the risk of violation of its provisions.

By its deficient and inexplicit wording on this area, the Draft obliges State Parties to legally bind themselves to ill-defined obligations —which can become far more exigent in the future— and enables Beijing and Moscow to back a state into a legal and political corner. The excuse of postponing their development for when some previous experience has been acquired does not hold water. Arguably, a verification mechanism with a simple amendment procedure could have been established.

Regardless of whether intrusive verification mechanisms —such as on-site visits— were up to the task, space-faring governments would be unlikely to adopt them due to the high level of confidentiality and sensitivity of space activities. Indeed, this is directly connected to the role played by States as it affects an area which is profoundly associated with State sovereignty. Although there exists a consensus on the need for multilateral action on the prevention of outer space weaponisation, national security concerns encourage spacefaring nations to maintain the debate on the placement of weapons in outer space vague. Until the adoption of a space arms control treaty encompassing primary-level obligations and paired with verifiability is not achieved, a combination of primary-level and secondary-level obligations may be pursued[358].

8. The Draft PPWT, despite aiming to be portrayed as a comprehensive treaty, falls flat on tackling one of the main consequences of outer space weaponisation, space debris. The perception of China's rising space activities as a reflection of multiple and competing interests of an extending array of stakeholders, which are perceived as uneagerly to pay the costs associated with protecting the commons, does not make it any easier. If China aims to become a global rule-maker, it cannot isolate itself from the ever-intensifying efforts of the international community to adopt a holistic approach towards the long-term sustainability of outer space activities[359] . Besides, what the Popular Republic of China needs to achieve so as to be a perceived as a legitimate voice in the construction of the legal framework for outer space —and of the new international order in a broader sense— , is to leave aside its national security and defence strategies as well as the commercial profits deriving from outer space exploitation in the pursuit of the preservation of the global common nature of outer space.

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[357] SU, J., *op. cit.*, footnote 93, p. 90.

[358] Ibid., p. 89.

[359] Paragraph 3, Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee on the Peaceful Uses of Outer Space were adopted in 2019 (A/74/20, para. 163 and Annex II) found in BIN, L., *op. cit.*, footnote 9, p. 594.

9. Conclusions as the latter on the limitations that the Draft PPWT languishes were of extraordinary utility when discussing the advantages and disadvantages of North Atlantic Treaty Organisation's most evident options in relation to the Draft PPWT. Without them, the dialectical exercise would have been incomplete, lacking in depth and context. Bearing in mind that the Alliance does not aim to develop space capabilities of its own, nor plans to launch weapons into outer space, the proposed courses of action have remained fully in line with International Law.

10. The maintenance of the statu quo, despite being a short-medium-term course, has as main advantage the existing ambiguity and ill-definition, which ensures that the Allies enjoy plenty of room for manoeuvre in regard to its training and exercises. Notwithstanding certain punctual events, the current statu quo has ensured the well-functioning of satellite communications. However, this is unsustainable as the proliferation of actors, undertakings and capabilities have decreased the preparedness of the present legal framework to the ongoing situation. One of the conclusions of this work —which has been supported on the numerous events cited— is precisely that a weak space regime encourages these addictive-like hostile behaviours deteriorating an already mercurial space environment[360]. Neither the Draft PPWT nor the *laissez-faire* scenario are the appropriate response to a weak space regime. The former enables Beijing and Moscow to elaborate on the conceptual framework for future negotiations, while the latter does not prevent the fall in the security dilemma —or the full-scale arms race in outer space—.

11. The formulation of proposals for amendment to the current Draft PPWT, even if the provisions to modify are well identified, are arduous due to their implications. If the Draft was subjected to amendment by NATO, it would take ICoC's future prospects and spotlight away, proclaiming the Popular Republic of China a true rule-maker on outer space governance. Moreover, it would tip the balance in favour of the hard law approach reversing the established trend so far. Thus, it is believed that the update of the existing rules of International Law governing space activities, the development of a shared awareness on the potential perils that outer space involves and the exploration of strategic collaboration should be promoted[361]. In case proposals are submitted —being essential that they enjoy wide and cross-cutting support— and their negotiations fail to conclude in an agreement, this result may have negative effects on the hopes and willingness of the international community regarding the widening of the international legal regime on outer space, rendering it a hopeless case. Arguably, NATO's political leverage and credibility could be effectively diminished.

12. The elaboration of its own normative proposal has to overcome several setbacks, being mainly the diverging interests on outer space and the capacities to pursue them —or the lack of both— among NATO's Member States and the necessary great deal of political will to achieve a choral voice. Despite the frictions that are likely to arise, by presenting its own feasible and circumscribed instrument, even if it is in a lesser relevant area and precisely because of it, a spill-over effect could eventually take place —in the areas to be tackled as well as in the number of participants of the regime— contributing to the non-weaponisation of outer space and to a more secure space. Apart from acting as

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[360] LIGOR, D., MCCLINTOCK, B., *op. cit.*, footnote 5, p. 59.

[361] MOON, M., *op. cit.*, footnote 188, p. 11.

a centre of gravity for space governance, by committing themselves through TCBMs or other soft law instruments, other benefits related with New Space companies, transparency, etc. could be derived. Notwithstanding, it would be delusional to focus only on the strengths of this option given the depth of its adversities.

13. The dialectical exercise has succeeded in fostering an exercise in introspection and reflection upon the Alliances' goals and strengths. Although the aim of this dialectical exercise was not to point out a preferable course of action, it is inevitable not to succumb to the tentation of drawing some conjectures, such as the pressing need for a new social contract and the absence of political will to put short-term self-interests aside and focus on the collaborative international solutions proposed above to secure long-term international security. This reflection is in itself worthy of an entire paper.

14. The elephant in the room is the disagreement over substantive space obligations and arms control as such, specifically whether it is more pressing to address weapons in outer space or ASAT systems. Whether this is achieved through soft law or hard law solutions is irrelevant since cooperation is the genuine panacea for durable international peace and security. This is precisely what China is running short of, as its norm-setting efforts fail in creating a climate of cooperation, pluralism and interdependence on outer space.

15. Chinese governance initiatives are perceived as a reflection of their desire to expand and gain an edge in all areas that can constitute a competitive advantage. In truth, the battle for space domination is a subset of the greater battle for information dominance[362]. The current international order does not serve its interests, and the same can be said of the outer space regime. It is clear that the Popular Republic of China is trying to change it to suit its concerns, but should not therefore be systematically considered as a revisionist actor. This conception should be nuanced.

As far as the outer space regime is concerned, the Draft PPWT does not make any significant changes to the current system nor provide answers to existing loopholes. Moreover, it could be considered an exteriorization of the Chinese pattern to resist change and adaptation in favour of reorganising its enclosing environment. Therefore, the Popular Republic of China does not seek to overhaul the system but to adapt it slightly to its interests while trying to crown itself as a benign actor.

16. It is through the resolutions proposed in the framework of the CD that it intends to reinforce itself in this role. Although they have been adopted by a large number of States, China is far from being seen as a benevolent actor pursuing the common good and respect for the global commons. Indeed, if the Popular Republic of China aspires to become a rule-maker, it has to draw the credibility of any of its initiatives —and with special regard to the normative ones— upon its concrete behaviours in outer space[363]. Besides, this is the reason why it still owns a limited normative power given that the international community is not ignorant of its intentions. However, this is not an indication that we should be complacent. On the contrary, everything possible should be done to ensure that China's capacity of influence or normative power does not increase —and if it is necessary to reform the ICoC or propose new instruments or TCBMs, so be it—.

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[362] CHENG, D., *op. cit.*, footnote 2, p. 551.

[363] BIN, L., *op. cit.*, footnote 9, p. 608.

17. The demonization of the Popular Republic of China is counterproductive. No nation that claims to be a space power, because of the many opportunities that outer space presents and its intimate connection to national security, is willing to reduce its potential gains, let alone limit its sphere of action. Only a change in the outdated system can be generated —given the current lack of consensus on the appropriate approach and political will— as a collateral consequence of the growing relevance of non-state actors in this area. Moreover, the importance of New space companies is foreseen to displace the role of State Governments in space activities from the main rule-making and supervision authority to a more cooperative and open role[364]. But for the time being, civil society will need to be content with the possibility of non-state actors making States take action. Until that happens, outer space governance will come to pass as a "drama of the tragedy of the commons", with debris clogging LEO and the menace of outer space weaponisation burgeoning, despite space becoming more important to global economic health[365].

[364] LU, Z., *op. cit.*, footnote 41, p. 525.
[365] FREEMAN, C. P., *op. cit.*, footnote 12, p. 16.

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8. ANEX: THE DRAFT TREATY ON THE PREVENTION OF THE PLACEMENT OF WEAPONS IN OUTER SPACE, THE THREAT OR USE OF FORCE AGAINST OUTER SPACE OBJECTS.

Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (Draft)

The States Parties to this Treaty,

Reaffirming that further exploration and use of outer space plays an ever-increasing role in the development of humankind,

Willing that outer space would not turn into a new area of weapon placement and an arena for military confrontation to avert a grave danger to international peace and security,

Reaffirming the importance of strict compliance with the existing multilateral agreements related to outer space activities and recognizing that the observance of principles and rules of international space law in outer space activities contributes to building confidence in peaceful intentions of States,

Noting that the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies of January 27, 1967 (hereinafter referred to as the 1967 Outer Space Treaty), obliges the States Parties not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, not to install such weapons on celestial bodies, or station such weapons in outer space in any other manner,

Recognizing that while the existing international agreements related to outer space and the legal regime thereof play a positive role in regulating outer space activities, however they are unable to fully prevent the placement of weapons in outer space,

Recalling the resolutions of the United Nations General Assembly "Prevention of an arms race in outer space" which inter alia emphasise the need to examine further measures in the search for effective and verifiable bilateral and multilateral agreements in order to prevent an arms race in outer space,

Have agreed as follows:

Article I

For the purpose of this Treaty:

(a) the term "outer space object" means any device placed in outer space and designed for operating therein.

(b) the term "weapon in outer space" means any outer space object or its component produced or converted to eliminate, damage or disrupt normal functioning of objects in outer space, on the Earth's surface or in the air, as well as to eliminate population, components of biosphere important to human existence, or to inflict damage to them by using any principles of physics.

(c) a device is considered as "placed in outer space" when it orbits the Earth at least once, or follows a section of such an orbit before leaving this orbit, or is placed at any location in outer space or on any celestial bodies other than the Earth.

(d) the terms "use of force" or "threat of force" mean, respectively, any intended action to inflict damage to outer space object under the jurisdiction and/or control of other States, or clearly expressed in written, oral or any other form intention of such action. Actions subject to special agreements with those States providing for actions, upon request, to discontinue uncontrolled flight of outer space objects under the jurisdiction and/or control of the requesting States shall not be regarded as use of force or threat of force.

Article II

States Parties to this Treaty shall:

– not place any weapons in outer space;

– not resort to the threat or use of force against outer space objects of States Parties;

– not engage in outer space activities, as part of international cooperation, inconsistent with the subject matter and the purpose of this Treaty;

– not assist or incite other States, groups of States, international, intergovernmental and any non-governmental organisations, including non-governmental legal entities established, registered or located in the territory under their jurisdiction and/or control to participate in activities inconsistent with the subject matter and the purpose of this Treaty.

Article III

Nothing in this Treaty can be interpreted as preventing the States Parties from exploring and using outer space for peaceful purposes in accordance with international law, including the Charter of the United Nations and the Outer Space Treaty of 1967.

Article IV

This Treaty shall by no means affect the States Parties' inherent right to individual or collective self-defence, as recognized by Article 51 of the UN Charter.

Article V

States Parties recognize the need for measures to control compliance with the provisions of this Treaty, which may be the subject of an additional protocol.

In order to enhance confidence in compliance with the provisions of this Treaty States Parties can implement on a voluntary basis, unless agreed otherwise, agreed transparency and confidence-building measures.

Article VI

To promote the implementation of the purposes and provisions of the Treaty, the States Parties shall establish the Executive Organisation of the Treaty, which shall:

(a) consider matters related to the operation and implementation of the Treaty;

(b) receive for consideration inquiries by a State Party or a group of States Parties related to an alleged violation of the Treaty;

(c) organize and conduct consultations with the States Parties in order to address the situation related to the alleged violation of the Treaty;

(d) refer the dispute to the United Nations General Assembly or the United Nations Security Council if the problem related to the alleged violation of this Treaty remains unresolved;

(e) organize and hold meetings to discuss and accept the proposed amendments to this Treaty;

(f) develop procedures for collective data sharing and information analysis;

(g) collect and distribute information provided as part of transparency and confidence-building measures;

(h) receive notifications on the accession of new States to this Treaty and submit them to the Secretary-General of the United Nations;

(i) consider, upon agreement with the States Parties, other procedural and substantive matters.

The procedure of formation, the composition of the working bodies, operating procedures and provision of work of the Executive Organisation of this Treaty shall be subject of an additional protocol.

States Parties shall cooperate with the Executive Organisation of this Treaty to facilitate its performance of the functions entrusted to it.

Article VII

A State Party which has reasons to believe that another State Party fails to fulfill the obligations imposed by this Treaty may request this State Party to clarify the related situation. The requested State Party shall provide the clarification as soon as possible.

If the requesting State Party deems the clarification unable to solve its concerns, it may request consultations with the requested State Party. The requested State Party shall immediately enter into such consultations. The information concerning the outcome of consultations shall be sent to the Executive Organisation of this Treaty, which shares the information received with all States Parties.

If the consultations do not lead to a mutual settlement with due regard to the interests of all States Parties, any State Party or a group of States Parties shall seek assistance of the Executive Organisation of the Treaty and provide the relevant evidence for further consideration of such a dispute. The Executive Organisation may convene a meeting among States Parties to review such a dispute, make decisions identifying a violation of this Treaty and prepare recommendations based on States Parties' proposals to settle the dispute and eliminate the violation. The Executive Organisation may, in case it is not able to settle the dispute or eliminate the violation, bring the issue, including relevant information and conclusions, to the attention of the United Nations General Assembly or the United Nations Security Council.

In cases subject to the Convention on International Liability for Damage Caused by Space Objects of 1972, the relevant provisions of the Convention shall be used.

Article VIII

In this Treaty references to the States, except those contained in Article IX-XIII, shall imply any international intergovernmental organisation, which operates in outer space, if such organisation declares that it assumes the obligations provided by this Treaty and if the majority of its member States are States Parties to this Treaty. Member States of such organisation, which are Parties to this Treaty, shall take all necessary measures to ensure that the organisation make such declaration in accordance with the provisions of this Article.

Article IX

This Treaty shall be opened for signature by all States at the United Nations Headquarters in New York. Any State which did not sign the Treaty before its entry into force may accede to it at any time.

This Treaty shall be subject to ratification by signatory States in accordance with their internal procedures.

Instruments of ratification or accession shall be deposited with the Secretary-General of the United Nations, who is hereby designated the Depositor of this Treaty.

Article X

This Treaty shall enter into force upon the deposit of instruments of ratification by twenty States, including all Permanent Member States of the United Nations Security Council.

For States whose instruments of ratification or accession are deposited after the entry into force of this Treaty, it shall enter into force on the date of the deposit of their instruments of ratification or accession.

The Secretary-General of the United Nations shall inform all signatory or acceding States of the date of each signature, the date of the deposit of each instrument of ratification or accession, the date of the entry into force of this Treaty, the proposals for amending this Treaty, of the arising disputes and their settlement, as well as of other notifications, if necessary.

Article XI

Any State Party may propose amendments to this Treaty. The text of a proposed amendment shall be submitted to the Secretary-General of the United Nations for circulation to all States Parties. An amendment conference shall be convened if at least one third of the States Parties agree to do so.

Amendments shall enter into force upon their acceptance by consensus.

Article XII

This Treaty shall be of unlimited duration.

Each State Party shall in exercising its national sovereignty have the right to withdraw from this Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized its supreme interests. It shall notify the Secretary-General of the United Nations in the written form of the decision taken six months in advance of the withdrawal from the Treaty. Such notification shall include a statement of the extraordinary events that the notifying State Party regards as having jeopardized its supreme interests.

Article XIII

This Treaty, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall send duly certified copies thereof to all signatory and acceding States.