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VIEWPOINT

Chinese Geopolitics: Space Program Cooperation among China, Brazil, and Russia

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ABSTRACT

With the Obama Administration's foreign policy pivot to Asia, the Chinese government is concerned about the possibility of new challenges in their foreign policy sphere of influence. Since the 1990s, many political and military analysts have explored the eventual rivalry between these two states. However, events in the Middle East preoccupy U.S. attention, leaving China moderately free in Southeast Asia, though it is uncertain for how long this will persist and if the United States will reallocate its attention to contain China. In this case, the Chinese government will need to develop countermeasures to sustain its geopolitical interests. There are two focuses in this analysis: (1) the Chinese geopolitical naval situation, exploring the problems in the geosphere surrounding China and the eventual competition with other regional powers and the United States in East Asia; and (2) the potential for space program cooperation with Russia and Brazil, which, in turn, dramatically changes the balance of power in outer space through positive aspects of Russian technical capabilities and strategic Brazilian geographic (Alcântara launch site).

After the end of the Cold War, several analysts and observers predicted that the next geopolitical disturbance would occur between China and the United States.¹ However, the terrorist attacks of 11 September 2001 (9/11) drew attention towards the Middle East, American military operations in Afghanistan, towards the war on Iraq, and the global war on terrorism ("war on terror") more generally. Then, after more than a decade, the withdrawal of major U.S. combat forces from these two countries and the renewal, in the U.S., of the Obama Administration's strategic rebalancing on Asia brought about a geopolitical crisis between China and the United States.² Once again, political and military events, such as the Arab Spring and Ukraine crisis, drew considerable U.S. attention, further delaying an eventual geopolitical Chinese-U.S. dispute in the Pacific and in East Asia.

One main concern is how much time will pass until a dispute takes place between China and the United States. This very dangerous situation will not develop as a result of these two potential antagonists alone. Rather, the side

with more strategic partnerships will enjoy an advantage. Furthermore, Russia, Brazil, and India will play a key role owing to their geographic positions, military power, and scientific potential, and both sides will need to secure their interests by gathering these three partners. For China, the safest way to pursue such an agenda involves employing a geopolitical strategy to strengthen its relationship with Russia and Brazil, while averting the naval power of the United States and of its allies in the region. China's best alternative entails a "metageopolitical" strategy involving outer space.

Geopolitical factors

Throughout the 1990s, several political and military analyses explored the possibility of engagement between the United States and China.³ This view, in part, replaced the Cold War vision of polarized antagonism between Russia and the United States. In fact, everything pointed in this direction, and some incidents, like the Hainan Island incident, involving a mid-air collision between a U.S. Navy intelligence aircraft and a People's Liberation Army Navy interceptor fighter jet, exaggerated hostilities.⁴ However, the 9/11 terrorist attacks changed everything, and military and political attention moved to Afghanistan and later, in 2003, to Iraq. The next decade became known for the doctrine of the "war on terror" launched by the United States under the George W. Bush Administration.⁵

A decade after 9/11, the Obama Administration attempted to refocus American policies back to East Asia. Attempts were made to recover an emphasis on U.S. engagement in Asia and to reinvigorate trade with Pacific allies, while counteracting potential Chinese territorial arguments claiming that the former administration (the Bush Administration) did not give proper attention to Asian regional security issues and that the U.S. should restore traditional levels of engagement within the Pacific-Asia region. This was viewed as hostile by China, and as a way to obstruct the Chinese government in achieving its eventual role as the major power in the region.⁶ However, conditions in the Middle East took precedence for U.S. foreign policy with the advent of the Arab Spring and a concern for old rivalries in Eastern Europe, like the dispute in the Ukraine and Baltic region,⁷ hindering a U.S. focus on facing China in Southeast Asia.

It is difficult to say how much time these events have bought for China, and it is likely that the U.S. Pacific rebalancing strategy will return as a major focus of the United States. After all, prior to 2020, the U.S. Department of Defense (DOD) plans to move 60% of the U.S. Navy and Air Force into the Asia-Pacific region.⁸ These plans involve the use of new long-range bombers and nuclear-powered submarines designed to operate in high-threat environments, and a well-organized cooperation line of allied countries that support U.S. forces in the region, potentially blocking China's access

to the Pacific Ocean. Deeply intertwined U.S. defenses in the First Island Chain (Kuril Islands, Japanese Archipelago, Ryukyu Islands, Taiwan, the northern Philippines, and Borneo) deny China seafaring access, restrict Chinese naval forces, and open the United States to the possibility of Chinese air strikes and naval retaliations.⁹

Furthermore, U.S. intentions to deploy a U.S. Terminal High-Altitude Area Defense (THAAD) anti-ballistic missile system into South Korea that is capable of engaging tactical and theater ballistic missiles to up to 200 kilometers (km) and at altitudes of up to 150 km weakens Chinese nuclear deterrence, while further disturbing the delicate balance of power in the region.¹⁰ Considering the regional nuclear powers, the United States, Russia, and India, China may have the least developed response program. Moreover, U.S. considerations of such a strategic system are planned to defend South Korea from an eventual North Korean attack. The South Korean forces already possess Patriot systems for point defense and Aegis destroyers capable of stopping ballistic missiles that may come from the north. Furthermore, in responding to the most severe weapons that North Korean forces possess (artillery rockets and saturation attacks with short-range missiles), the THAAD system would not be effective.¹¹ This generates several doubts concerning U.S. intentions in the peninsula and towards China.

This geopolitical complication is additionally strained due to the Chinese dilemma regarding whether to choose between a one-way or two-way ocean navy. If the former were selected, China would be a strong regional player with naval power projecting to the western Pacific. The latter involves Pacific and Indian Ocean players operating at a global scale, taking an audacious position throughout the Eurasian continent and ensuring access to important trade routes and strategic resources. However, in the second scenario, the Chinese Navy confronts the Indian Navy. This presents a danger for a country that is already compelled to address the powerful U.S. Navy supported by Japan, the Philippines, Taiwan, and South Korea.¹² If the Chinese government eventually makes the risky decision to exert military control over the Indian Ocean and to confront the Indian naval sphere, it needs to deploy several surface-to-air (SAM) sites around ports to prevent airstrikes, though these defense systems are not effective against Indian ballistic missiles, and a major deployment of naval assets by India makes China more vulnerable. In any case, such a military operation needs to be managed by a strong naval power and there must be absolute certainty that no other actor in the region will take part in the Indian situation.¹³

Thus, if the main strategy of the United States and its allies involves holding the naval projection of China, while developing strategic ties with India, it will become difficult for China to become a global military player and, even worse, China may become vulnerable to attacks on its own mainland territory. The fact is that China requires an answer to such regional challenges and a global retaliatory response. In addition, due to the mobility factor, warships and

submarines are more effective than terrestrial bases, leaving China with few viable options to directly address eventual hostile situations. As such, a possible long-term alternative for China involves the use of outer space weaponry through a network of partnered spacefaring countries.

Metageopolitics and the weaponization of space

The current context of the space domain shows its geostrategic importance owing, in part, to the probable introduction of weapons in space. Currently, more than 60 countries manage a space program or engage in space activities, demonstrating that outer space constitutes a major field for strategists and in security policies.¹⁴ This is not only because of communications, territorial reconnaissance, and positioning systems operating through satellites, but rather due to technologies that can render outer space a battlefield as a result of space-based weapons platforms. Unlike the use of conventional weapons, the military use of space is not regulated through any global agreement, and this lack of regulation can be exploited by anyone technologically capable of doing so. For Al-Rodhan, the concept of metageopolitics is the next geopolitical concept to interact with strategies based on geography and space owing to these new technologies.¹⁵ Despite issues discussed by the author, this concept proves useful to China in supporting the country's relationship with potential strategic partners (e.g., Russia and Brazil), and in allowing a certain level of military and technological cooperation. It is important to state here that this is not an "anti-West" oriented cooperation and it is unlikely to develop as one.

Currently, space weapons involve the engagement of rival satellites, enabling the disruption of hostile communications, localization and positioning (GPS), satellite imagery and precision targeting and, thus, rendering it effective in conflict situations, buying time for a country capable of using it in defending its territory. In fact, the United States and the former Soviet Union began experimenting with anti-satellite weapons (ASAT) during the Cold War and agreed to sign the Anti-Ballistic Missile Treaty in 1972, which bans the development and deployment of anti-ballistic missile systems. However, the United States later withdrew from the treaty. Technologies required to destroy a rival satellite are not particularly advanced, as launching a kinetic-energy vehicle from a ballistic missile can simply destroy rival satellites. What renders this task complex is the level of precision needed to make a kinetic-energy vehicle hit a targeted satellite, which, at this point, only the United States, Russia, and China possess.

At the same time, one main purpose of a space program as a retaliatory system centers on the use of space-based weapons to strike targets on Earth. While a network of satellites that marks targets and technical resources needed to put such weaponry into operation is costly, the future need to create such a system in protection of American interests was recognized by the George W.

Bush Administration, although the Obama Administration later withdrew interest.¹⁶ Such weapons are able to neutralize targets on Earth, and even in space. For example, launching projectiles from orbit using tungsten or uranium rods that fall from orbit by at least 3 km/second (s) result in considerable destruction to the target. A space weapon of this type can serve as a tool for striking military targets that are time critical (e.g., ballistic platforms, laboratories with chemical or biological weapons, aircraft carriers, and eventually targets that are difficult to reach with air power owing to geographically remote positioning or anti-air defenses).¹⁷ Even with the unlikely probability of this kind of weapon before the next 20–30 years, the first country to launch such a weapon system achieves the next level of military hegemony, or at least the most advanced response to potential aggression.

To analyze the realization of cooperation between China, Russia, and Brazil, we focus on the metageopolitical dimensions that will determine the levels of space projection each actor can possess: social and health issues, domestic politics, economics, the environment, scientific and human potential, military systems, and international diplomacy.¹⁸ In the case herein, changing the environmental dimension to geography is important due to the fact that space launch access from a geographic position close to the equator and an unpopulated area is the main benefit to the Brazilian situation with the Alcântara launch site.

Despite powerful industrial capacities tied to a growing economy and imminent space militarization, China remains technologically behind the United States in terms of space-based capabilities. This asymmetry is mitigated somewhat, however, due to suspicions of the United States, Japan, and some European countries that China could send sensitive technologies to countries such as North Korea and Iran. Concerns here lie not only in the eventual transmission of Chinese technologies to such countries, but also in Chinese ambitions themselves. Chinese space program successes boost China's image as a global power, and the technological steps that China makes equalize and neutralize the technological advantages of the United States. China produces approximately 600,000 engineers each year, while the United States produces 70,000.¹⁹ In 2010, China launched the same number of satellites as the United States.²⁰ According to Admiral Joseph Mulloy of the U.S. Navy, China possesses more diesel and nuclear attack submarines than the United States.²¹ In addition, the number of Chinese scientific patents surpassed those of the United States and Japan in 2011, rendering China a leader in innovation and intellectual property.²² China's domestic politics, economics, and scientific and human potential position the country as a global superpower. Even if China is not interested in projecting globally, it will be completely able to defend itself and its interests regionally. Despite all this, China is weakened by its need for access to strategic resources and by its geography. Thus, deep strategic partnerships are necessary.

Chinese geopolitical issues and opportunities

As established earlier, the First Island Chain is problematic in a future hostile situation. A hypothetical battle group consisting of the United States, Japan, Taiwan, South Korea, and the Philippines could deny China access to the strategic Strait of Malacca, blocking off its main supplier of oil and strategic resources. Furthermore, if India were to eventually take part in such a scenario, mainland China would face problems along its western border close to Tibet. In extreme cases, a danger zone could develop in the already problematic Kashmir, and the only way to prevent this hypothetical situation involves Pakistan. Nevertheless, recent political events help China bypass this dangerous scenario.

The recent events in Ukraine and Syria pushed Russia politically and ideologically towards the East. Sanctions against Russian leadership and governance may cause the Russians to bet on a Eurasian block, as demonstrated in the Sino-Russian gas deal of 2014, whereby Russia will supply China with another several billion cubic meters of gas every year for the next three decades through the Altai pipeline.²³ Furthermore, the Shanghai Cooperation Organization, a geopolitical block that some years ago was inoperative due to divergences between China and Russia,²⁴ is now becoming a major geopolitical organization.²⁵ In fact, close cooperation between Russia and China constitutes the only safe route that these two actors can take through future decades. As Russia still remains the second most powerful army in the world, energy and mineral resources could keep flowing to China, and Russia would continue to be supplied with manufactured goods through “iron chains” of railroads, which are difficult to disrupt under hostile conditions.

Meanwhile, Chinese opportunities to establish space warfare capabilities with retaliatory power likely rely on cooperation with Brazil, for geography and access to space, and Russia, for scientific and technical know-how. As Russia holds approximately 40% of all orbital launches each year, the Russian space program is the most advanced in the world, along with the United States, despite experiencing difficulties in terms of sustaining its scientific and technical workforce; recently, Russia assumed greater control over its space industry through a re-nationalization process, which is beneficial due to its proximity to military applications and to more substantial funds.²⁶ Overall, the efficiency and cost of the Russian space program positions Russia as a strategic partner with China and Brazil. For example, the Soyuz is still used by NASA for human spaceflight owing to no operational U.S. alternatives. This will end soon, though, as the United States is currently seeking new rockets produced by the private sector to expand its national space industry, even if those rockets are more expensive than the Soyuz.²⁷ Further, the United States wishes to avoid such a strategic dependence on the Russian space program.

The scientific and technical potentials of an eventual partnership between China, Russia, and Brazil boost all three national space programs. Russian

expertise further improves Chinese skills, and the Russian program can ease demographic pressures of an older and aging workforce with its replacement with a younger aerospace workforce from China.²⁸ For Brazil, such cooperation salvages the Brazilian space program. The Brazilian Space Agency (AEB), to illustrate, suffers from a lack of technical expertise due to political, ideological, and budgetary factors, a problem that compromised Brazilian participation in the International Space Station and the country's reputation. Further, the only Brazilian astronaut left the AEB shortly after completing his spaceflight in 2006.²⁹ Although Brazil manages a space program, it is not a priority of the national government.

Also, the Alcântara space launch accident of 2003 crippled the Brazilian space program's development for several years. Such effects worsened due to the Brazilian government's lack of strategic vision and due to the economic crisis that the country is currently experiencing. In reality, Brazil will likely not achieve space-related success independently, not only due to its lack of scientific and technical potential, but due to the Brazilian government's inability to develop a national outer space strategy and to American interests in preventing technological advances in Brazilian space technology.³⁰ To further compound the situation, Ukraine cooperated with the United States to prevent technological transfer to Brazil.³¹

This geopolitical situation, and Brazil's economic and technical realities, requires the Brazilian space program to partner with entities (i.e., China and Russia) that can better resist U.S. pressures on preventing technological transfers, while enjoying Brazil's geographic advantages. The Alcântara launch site is one of the most optimally positioned launch sites in the world due to its proximity to the equator (around 2–3 degrees away); the launch site allows for a significant advantage in terms of launching geosynchronous satellites, reducing costs by 30%.³² Moreover, in cases of economic crisis and technical difficulties in Brazil, a partnership serves as a low-cost solution that these three countries can exploit.

Conclusion

Russia and China must collaborate if they wish to play a decisive role in the future of this planet. If rivalries between the two countries take precedence over cooperation, both countries will be restricted. A network of railroads may strengthen relations and the need for cooperation, as such a network could supply goods, resources, and soldiers, hindering the development of future animosities. Meanwhile, China must identify ways to navigate through the U.S. Navy and its allies in the First Island Chain. Otherwise, Chinese geopolitical ambitions will always be vulnerable to American goodwill.

This could be avoided if China eventually convinces Brazil to take part in space cooperation. As Brazil's technical capacities still fall far below minimum capacities

needed for a country of continental projection, China may provide technological assistance in return for access to the Alcântara launch site or may forge economical deals that can boost the Brazilian economy in a decade of economic troubles. In any case, a Chinese priority on space program cooperation with Brazil and Russia allows for all three states to realize geopolitical interests.

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