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China in Antarctica: The End of the Antarctic Treaty System

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Abstract

The 1959 Antarctic Treaty System constructed on liberal ideals to address superpower tension and sovereignty claims was successful in the 20th Century, promoting global cooperation through scientific research and environmental protection. This system is redundant for the 21st Century geopolitical environment because realist nations, like China, seek to ascend to global leadership and secure resources to meet national objectives and sustain economic growth. China's thirst for energy, rare earth minerals and marine resources point to future conflict with other treaty nations. Potential triggers to conflict with China in Antarctica include the dissolution of the Antarctic Treaty System; challenges to China's rise; Chinese support to flagged vessels; militarization of bases; and exploitation of resources. The Antarctic Treaty System, to survive in the 21st Century, must adjust to address historical sovereignty claims, rising power national interests, representative leadership, and ensure robust international governance and norms. The U.S., as the hegemonic Antarctic power, must lead this transformation in order to ensure future security of this commons.

China in Antarctica: The End of the Antarctic Treaty System

Great God! This is an awful place.

—Sir Robert Falcon Scott¹

Antarctica presents undeniable challenges to strategy in the modern global commons. No country rules it, no one lives there full time, no wars have been fought on it or for it, it has no economy, occupies no seat in the United Nations, and it has no current export other than scientific research. Yet it covers some 14 million square kilometers, is larger than both Australia and Europe, has a coastline of nearly 18,000 kilometers,² holds seventy percent of the world's fresh water, and under its ice and in its surrounding seas lies an abundance of natural and mineral resources.³

Antarctica lives today under ambiguous international guidance. The 1959 Antarctic Treaty System addressed sovereignty claims and a potential nuclear standoff between two superpowers. For the remainder of the century, collective scientific research reigned supreme over individual nation state interests, and from a liberalist theory perspective, provided as an example of an international institution where global cooperation benefited all nations and constrained unilateral nationalistic action.

Nearly 60 years on, the treaty, in its current form, is not relevant for the 21st Century geopolitical environment. The 21st Century global thirst for mineral, energy and marine life resources has focused the world, especially emerging nations, on Antarctica. This realist perspective acknowledges the current state of international order in Antarctica, but that national interests will clash in the future. The uncertain future of the Antarctic Treaty System has resulted, therefore, in nations preparing to exploit the continent if, or when, the governance system or policies change.

This ambiguity allows the new superpower, China, to establish itself as a future polar influence. China has undergone rapid polar development in the past forty years, matching its rise as a global economic power. China's (realist) Antarctic policies are at odds with the current (liberalist) Antarctic Treaty System's intent, in that China primarily seeks to secure resources to sustain economic and social growth.

The redundancy of the Antarctic Treaty System in the 21st Century and China's aggressive expansion into the Antarctic and Southern Ocean challenges both international order and other nations. Solutions to Antarctic issues transcend national and international diplomatic, informational, economic and military instruments of power.

Averting future conflict in Antarctica will require strategic planners and policy-makers understand this rapidly changing geopolitical environment and address 21st Century Antarctic governance. Further, it will require identification of both triggers to conflict and options that exist now to avert future clashes. In doing so, international and national policies, in particular those of the U.S., the current hegemonic Antarctic power, will need to adjust to ensure security in a region often described as the last true global commons.

Part 1: The Geo-Political Environment

Antarctica is a strategic global commons and influences not only national policies and security, but also those of the collective global population. Answers to climate change, the evolution of species, rare earth mineral availability and questions of historical scientific nature are contained within or around the continent. Antarctica draws increasing attention from many nations seeking to secure food, water, mineral and energy security for the future. Governing this diverse and inhospitable region presents

its own challenges as emerging polar powers, with their own national agendas at odds with traditional governance, collide with established Antarctic states.

International Relations Theory

21st Century Antarctica governance is at a theoretical crossroads with no consensus for future international order. Liberalist theory identifies the collective betterment of all states (and the global system) under the original Antarctic Treaty System for scientific knowledge and common interest in exploration of the 'last frontier'. Further, there exists an interdependence of states owing to the cost and difficulty of operating in the Antarctic, although this is diminishing as nations develop their own capabilities and capacity for unilateral operations. The Antarctic Treaty System, voluntary and consisting of the major protagonists of the 20th Century, reinforced the liberalist theory that peace was achievable under a democratic governance structure.⁴

The waning power of international institutions, emergence of new global powers, and increase of inter-state conflict since the end of the cold war, reinforces a realist theoretical analysis of Antarctic governance. Acknowledging states are sovereign and autonomous, they require power in order to survive in the global environment. For emerging nations in the 21st Century, this means securing sufficient resources to sustain economic and social growth. The Antarctic Treaty System constrains resource exploitation, and therefore ultimately emerging nation growth. National interests challenge the status quo, and the liberal ideal of the institution.

Scientific research in the Antarctic has shifted from exploration to exploitation. This reflects the realist perspective of many nations: having invested in science to unlock the continent, how best can they exploit it to meet national interests? The lure of Antarctica for nations like China, India, Iran, South Korea, and Turkey is not to

contribute to the liberalist collective global body of scientific knowledge. It is about resources. Each of these nations has the instruments of national power to develop a realist approach in Antarctica. They acknowledge that shifting the balance of power in Antarctica will take time, but investment now will challenge the hegemonic position of the U.S. and exert influence the governance system to meet national objectives.

The Strategic Significance of Antarctica in the World System

Antarctica is important as both a continent and a region in international relations. The Antarctic Convergence refers to that area where the cold waters of Southern Ocean meet the Pacific, Atlantic and Indian Oceans, and is nautical in application, with regard to fishing, marine life and navigation. The definition of the 'Antarctic' in the 1959 Antarctic Treaty is "the area south of the 60° South Latitude, including all ice shelves."⁵ The Drake Passage separating the South American continent from the Antarctic Peninsula "provides the shortest oceanic route between the Atlantic and the Pacific, and in the event of the interruption of passage through the Panama Canal, would become the only route open in western hemispheric waters."⁶ Accordingly, the United Kingdom, Argentina, and Chile maintain (overlapping) territorial claims to this strategic chokepoint.

The 1959 Antarctic Treaty was one of the most significant of the Cold War, achieving "demilitarization of the Antarctic, and the promotion of international cooperation, especially in the field of science."⁷ Stepping back from nuclear testing and dumping of waste on the continent by the United States and Russia, already engaged competitively in the fields of space exploration and nuclear expansion, provided diplomatic space. It also ensured that nations could exert soft power in the global commons, without the likelihood of armed confrontation or threats to sovereignty.

The Governance Structure for Antarctica

Governing Antarctica demonstrates the best, and the worst, of global institutions. The 1959 Antarctic Treaty governs Antarctica.⁸ Subordinate legal articles govern environmental management and five supplementing legal instruments address specific threats or issues, most notably the 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) and the 1991 Protocol on Environmental Protection to the Antarctic Treaty (known as the Madrid protocol).⁹ The liberalist perspective of the treaty is that it is a beacon of international cooperation, with all countries agreeing to put science ahead of national interests. The realist perspective sees the Antarctic Treaty as a paper tiger, voluntary, with no deterrence or enforcement mechanism, and therefore ineffective to address 21st Century challenges.

Signatories to the Antarctic Treaty System are a mixture of nations from those with a stake in the future of Antarctica and those seeking to improve national identity and standing through International Organization membership. In 1959 there were 12 signatories including the seven claimant nations and the two nuclear powers, Russia and the United States. Today, the treaty has 53 signatories, 29 consultative, and 24 non-consultative nations.¹⁰ Only the consultative nations have decision-making authority, and ascending to that status is subject to the approval of the consultative majority. This causes angst amongst emerging polar nations that argue that current governance of this global commons is an exclusive executive and not representative of the 21st century population.¹¹ The rising sentiment against the current governance system will result in future challenges to the organization to promote national influence and interests. If national power and influence is weak, then polarization of the

consultative nations is likely as nations align to shared interests, most likely access to resources.

The Antarctic Treaty System has been in force for over 50 years, and succeeded in managing the 20th Century issues of sovereignty, Cold War superpower tension, resource protection and dispute resolution. Notably, the resolution of these issues has not been to arbitrate decisively, rather to establish accords and amendments that are amenable to the majority over short timeframes, in essence deferring decisions until later.¹² However, later has now arrived for the Antarctic Treaty System, and it cannot handle the changes in the international system since the turn of the century.

The most pressing issue that faces the Antarctic Treaty System in the 21st Century is the protection of resources. Increasingly resolutions, in polar author Anne-Marie Brady's words are "a pyrrhic victory"¹³, as challenges from countries have diluted the original intent or effect. The implementation of both the CCAMLR resolution and Madrid protocol are examples, with the latest being the Ross Sea Marine Protected Area (MPA). Ratified on October 28, 2016, the agreement bans commercial fishing in a 1.1 million square kilometer area of the Ross Sea but is only a third of the original proposed area. Further, it is only binding until 2051 or when one of the signatories requests its dissolution.¹⁴ China and Russia have vetoed the resolution over the past five years, and China publicly campaigned for a 20-year binding timeframe only.¹⁵

The strategic planning and policy horizon for treaty nation states is mid-21st Century, when the Ross Sea MPA expires 2051 and the Madrid protocol ban on mining in the Antarctic expires in 2048. Nations are playing a strategic game, none more so

than China, agreeing to diplomatic compromise now, whilst setting the conditions to negotiate from strength in the future to secure resources.

Sovereignty: The Strategic Players, Claimants, Non-Claimants and Rising Powers

Antarctic claims date back to the age of discovery and exploration, and represent geographical proximity, contiguity and inherited rights in the case of Australia, Argentina, Chile and New Zealand, and discovery, possession and administration for France, Britain and Norway.¹⁶ Once the realm of national prestige, claims now recognize the importance of resource rights to the continental shelf and the associated 200 nautical mile Economic Exclusive Zone that would be legally endowed on a successful claimant, thus assuring access to rare earth minerals and living resources.¹⁷

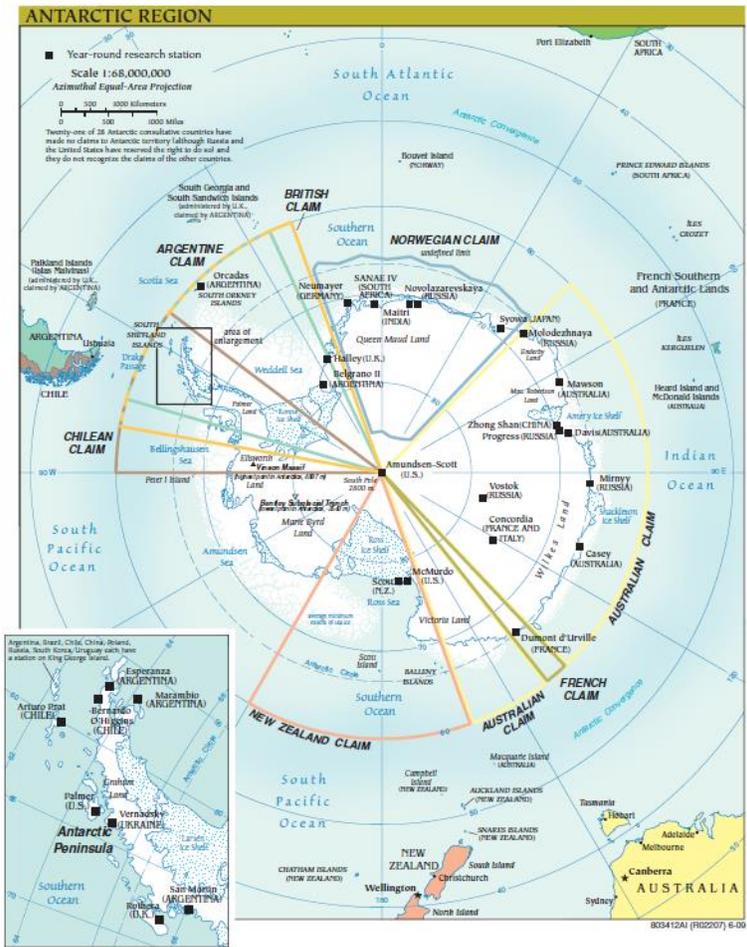


Figure 1. Antarctic Claims¹⁸

Claims to the Antarctic Continent are a contentious and unresolved issue.

Overlapping sovereign claims exist for the Antarctic Peninsula between Britain, Chile and Argentina. The resolve, national pride, and interests of each country are significant. It is only 34 years since the United Kingdom defeated Argentina for the disputed Falkland Islands (including the sub-Antarctic South Shetland Islands) off the coast of Argentina, as much to retain a future strategic foothold in the South Atlantic as support to British nationals in a far flung corner of a diminishing empire.

The second tension is that of the two non-claimant nations, Russia and the United States. The United States acts as a hegemonic power in Antarctica. It does not

claim, nor recognize any other country's claim to Antarctica; however, it reserves the right, along with Russia, to claim any part, or all, of the continent in the future.

Additionally, its premier research station, the Scott-Amundsen Base sits atop the geographic South Pole, in essence providing a point that affects any or all of the claimant areas in the future should the treaty system fail.¹⁹ The U.S. commits the greatest resources to the continent, however funding has largely been stagnant in recent years, and not upgrading capabilities, such as the U.S. Coastguard fleet of icebreakers, arguably shows symptoms of a declining or disinterested Polar power.

Russia has traditionally looked north, not south, to exert influence in the Polar Regions. Russia was instrumental in the creation of the current Antarctic Treaty in the 1950s, largely as part of the growing East vs West polarization of the world under the two super-powers. Russia has no claim on Antarctica but has steadfastly refused to recognize any other claim and reserves the right to claim part or the entire continent in the future.²⁰ Russian prestige is at stake more than anything in Antarctica, and its future southern policies will be shaped by success, or not, of its Arctic claims, resource exploitation, and influence in the Arctic Council. The status quo suits Russia in Antarctica, but only so long as it is succeeding in the North.

The last sovereignty issue is that of the growing non-claimant nations who seek to have a greater leadership role and access to Antarctic resources in the future. Discovery, historically, was the method of acquiring of new lands, requiring actual physical occupation and possession for legitimate sovereignty under international law. Occupation has always been difficult in Antarctica and no effective colonization of the continent ever occurred.²¹ Therefore, Antarctic occupation via seasonal and year-round

scientific stations, and naming newly discovered areas essentially asserts sovereignty, according to Klaus Dodds of the University of London, by putting “a huge flag on a flagpole close to the research station...it’s not very subtle.”²² Whilst not stated by the Treaty, effectively each nation is responsible for ‘policing’ its own base, adhering to established legal and procedural norms, but in essence operating sovereign bases under protocols much as embassies operate in foreign countries. This lends a veneer of credibility for Antarctic nations seeking to influence future revision of the Antarctic Treaty by virtue of their physical footprint on the Continent. At the same time, it adds a potential point of conflict for countries operating close to or around other nation’s bases, with no established arbitration of disputes or legal precedence, especially as new polar nations seek to establish themselves on the continent.

Rising players in the Antarctic scene include China, Japan, India, Turkey, South Korea and Iran. Their foray into polar exploration and discovery has largely paralleled three norms: firstly, the economic rise of these countries to the point where they have the means to establish and sustain polar missions (including the technical wherewithal); second, acknowledgement of current or future resource shortages to support expanding economies and populations; and third, these countries’ exclusion from the original Antarctic Treaty System. They are thus latecomers to exploration and scientific research. The national interests of each are varied; national prestige, resources, and leadership and influence of international institutions are outcomes that each seeks, directly challenging the current governance mechanism.

Research; Science as the Antarctic Currency

The success of 1957/58 International Geophysical Year demonstrated that collaborative scientific knowledge sharing between nations could trump Cold War

politics. Inclusion in the Antarctic Treaty System requires that nations generate and publish research, and have the logistical ability to support, unilaterally or cooperatively, missions on the continent. Article Three of the treaty requires 'scientific information, personnel and program plans to be exchanged', and is the measure of both compliance with Antarctic Treaty norms and maturity of national programs.²³

For China, India and South Korea, research has been their Achilles' heel. They are capable of providing the 'means' of Antarctic research, but not yet the scientific capability 'ways' with which to achieve objectives of increased Antarctic leadership and influence. The original twelve treaty signatories have generated the majority of scientific research to date. To 2004, the U.S., the U.K. and Australia were the highest ranked research nations, with "India at fourteen, China came in at nineteen, and South Korea at twenty-five."²⁴ Published research has retained much of the decision-making power in the established nations, much to the chagrin of other countries.

Nations conduct collaborative scientific research under the Special Committee on Antarctic Research (SCAR), but also unilaterally to meet national objectives only, none more so than in the areas of resource assessment and exploitation viability of both the Antarctic continent and convergence. The lack of transparency of these endeavors has raised suspicion between nations, and the failure of audit, allowable by Article 7 of the Treaty, weakens enforcement of the treaty system. Under the current Antarctic system, emerging polar powers have two options: either commit heavily to collaborative research to grow international influence and credibility (the old way), or grow influence through presence and polar capability, sharing research only if it does not compromise national interests (the new way).

Resources

The 1959 treaty addressed Cold War global security and Antarctic sovereignty quarrels in a time where security was largely from a military perspective. Environmental, economic and resource security are now the emerging issues facing nations, none more so than securing access to global commons living, energy, and rare earth mineral resources.²⁵

The harsh environment in Antarctica and ice shelf thickness has been the deterrence to mineral mining to date. Currently, exploitation of resources is too expensive to be commercially viable. This is likely to change during the 21st century due to three influences, climate change, global demand and technological advances.²⁶ Research to date suggests Antarctica is home to four of the ten minerals with less than 25 years global reserves, and a further five of fourteen with less than 50 years reserves. A global population approaching nine billion by 2050 will increase mineral demand by 25 percent.²⁷ Extracting minerals, coal, ore, oil, gas and other resources economically from the Continent will be the challenge of the future; however, the guise of scientific research masks the intention of many national scientific programs.

Necessity breeds innovation, and as resource demand and price increases, states and commercial entities will seek to solve issues such as extraction and transportation, previously considered untenable, in new ways. Resource extraction R&D has become an indicator of future policies and intent, none more so than by Asian countries, pairing private sector capabilities and expertise with national Antarctic policies, research priorities, and basing locations in congested continental regions demonstrating resource potential.

Conflict in Antarctica over resources would likely occur foremost in one of two strategic areas, owing to their susceptibility to exploitation. First, the Antarctic Peninsula, residing within the overlapping British, Chilean, and Argentine claims, has the least ice coverage, and is most likely to yield minerals. The second is the Ross Sea basin in the New Zealand claim predicted to hold prospective oil and gas fields in excess of 200 billion barrels.²⁸ Given that current global oil and gas reserves exist for at least 30 (and potentially up to 100) years and the sustainability of oil shale extraction in other regions, it would take a barrel price of over US\$100 for the Antarctic to be a commercially viable venture.²⁹ Therefore, it is likely that precious or rare mineral extraction will be the target in Antarctica first.

Mining in Antarctica has been a contentious issue amongst nations throughout the 20th Century, reaching a crescendo in the 1980s that nearly led to the demise of the Antarctic Treaty. The drafting of the original treaty specifically did not include policies on mining or resource exploration. New Zealand and the United Kingdom sought regulation “of mineral prospecting, exploration and development activities”³⁰ in the 1970s leading to drafting of the Convention of Regulation of Antarctic Mineral Resource Activities (CRAMRA). CRAMRA required all signatories of the Antarctic Treaty System to ratify, but crumbled after the discovery of the Ozone Layer hole and EXXON VALDEZ oil spill. This paved the way for the Protocol on Environmental Protection to the Antarctic Treaty (known as the Madrid Protocol) to be signed in 1991, banning all commercial mining in Antarctica.³¹ The protocol has a 50 years lifespan, reviewable in 2048 or on challenge of the Signatories.³² This protocol also signaled the growing impact of NGOs, such as Greenpeace, in the protection of the continent and convergence, a check and balance

to national interests and an actor that, through high public profile and media campaigning, influences future international decision-making.

Access to fresh water will be a national security issue for many nations in the 21st Century due to climate change and desertification in Africa and parts of Asia. The potential to mine the Antarctic ice-shelves, containing some 70% of the world's fresh water, is not as far-flung as towing icebergs may seem, having been under consideration and experiment since the 1970s. As with all Antarctic resource exploitation, necessity will drive economic viability with a notable legal exception in the case of ice because it is not subject to the Antarctic Treaty System laws governing mineral resources.³³

Resource exploitation in the Antarctic and Southern Oceans had its beginning in whaling, sealing and fishing, hence the historical and current interest of northern hemisphere countries including Norway, Japan, China and the United Kingdom. Both seals and whales, extensively hunted almost to extinction in the 19th and 20th centuries, enjoy controversial protection under the Antarctic Treaty System.³⁴ The potential for conflict arises owing to some country's claims, notably Japan, that commercial and scientific hunting of whales occur. The Southern Ocean is home to some 250 species of fish and krill, the food source for most Southern Ocean whales, seals, penguins and fish. Japanese and Russian flagged commercial fishing vessels targeting both fish and krill decimated stocks in the 1990s, and today tension remains between particularly southern ocean nations like New Zealand, Australia, Chile and Argentina, foreign flagged legitimate and illegal fishing vessels supplying Asian markets, and conservation groups such as Greenpeace and Sea Sheppard.³⁵

The geopolitical environment described above concludes that the 1959 Treaty governance system, effective for 20th Century issues of sovereignty, resource management, and international governance based on liberalist principles does not meet the challenges of the 21st Century. Ambiguity of unresolved sovereignty claims, polar leadership, and deferral of critical resource decisions has not addressed causal factors to polar discontent. Accordingly, emerging polar powers, with realist national interests at the fore of their polar policies, will challenge the status quo and redefine Antarctic governance.

Part 2: China's Rise as an Antarctic Power

China is a realist within a semi-liberal Antarctic governance framework. China's rise as an Antarctic power has been comparatively fast and viewed with suspicion by established polar nations. China's economic growth in the latter 20th and early 21st centuries provides the ability to generate Antarctic outcomes that have strategic global effects against China's national policies and direction. Further, analyzing China's Antarctic activities should occur in tandem with its approach to other global commons and national policies closer to home, namely the Arctic and China Seas strategies. China's Antarctic aspirations, viewed through its stated and unstated policies and actions, point to a quest for resources and leadership. Understanding its history, current policies and behavior sets the conditions for analyzing future intentions and behaviors.

China's National Objectives and Strategies

China's national foreign policy objectives are threefold: "first, political stability; second, sovereign security, territorial integrity and national unification; and third, sustainable economic and social development."³⁶ China's State Oceanic Administration is the government department responsible for China's polar activities. Nested under the

Ministry of Land Resources, the Administration manages activities and research in the Arctic and the Antarctic with tasks of supervising research, expeditions and logistics.³⁷ The State Oceanic Administration is also the interface with the UN Convention for the Law of the Sea (UNCLOS) and maritime law enforcement. This Administration also oversees China Maritime Surveillance, which has been in conflict with neighbors and competitors in the South China and East China Seas.³⁸

Viewed through a national lens, China's maritime policies and behavior are consistent in the Arctic, Antarctica, and China Seas, albeit at different stages of maturity. These are access to resources, participation in governance, and national prestige. In the Arctic, with no contiguous claim as other nations have, China opposes sovereignty claims within UNCLOS that could see the shrinking of international waters and with it, the opportunity to exploit natural resources or reduction of free passage for trade through the expanding northern sea routes.³⁹ Further, China does not have membership in the eight nation Arctic Council; therefore, it is an observer with only minimal power to affect policies important to its national interests. To exert influence on the Council and the Arctic nation states, China must do so bilaterally, invest in scientific research (especially in climate change and be willing to share it), and invest in international organizations, treaties and conventions like UNCLOS in order to balance the power of the Arctic states. This assists China's military, economic and political security, and provides leadership for the developing world promoting the Arctic as a global commons with resources and opportunity for the global population, not just the Arctic states.⁴⁰

China's recent behavior in the South China and East China Sea is of concern when analyzing China as a growing Antarctic power and future trends. First, a lack of

transparency of long-term policy in the South China Sea, or cooperation with international and regional organizations such as ASEAN makes it difficult to correlate diplomatic and informational gestures of cooperation and free trade when military modernization and expansion occurs at a rapid rate.⁴¹ Second, China's land reclamation efforts on islands and atolls in an effort to substantiate and bolster its 9-Dash Line sovereignty claims are in violation with the 2016 International Court of Justice rulings. The subsequent militarization of Spratly Islands, Subi and Mischief Reefs, demonstrate a willingness to challenge others in the region and assert not only sovereignty, but also sole access to and ownership of resources.⁴²

China's Antarctic History

China has been notably absent from Antarctic achievements, science and governance throughout the 20th Century, although initially not by its own design. The original 1959 Antarctic Treaty excluded China, at the urging of the United States, fearing increased influence aligned to Russia, its own alignment to the Republic of China, and the desire to have only countries that had a presence on the Continent as signatories.⁴³

Four phases define China's Antarctic history, "the Pre-Reform period (1950s-78)...the Fight for Legitimacy Period (1979-89)...the Consolidation, Capacity Building and Cooperation Period (1990-2005)...and the current Quest for Leadership Period (2005-present)."⁴⁴ As the period titles suggest, Chinese Antarctic strategy had distinct objectives, by period, to grow China's influence in Antarctic affairs, consistent with its economic, and diplomatic rise in global affairs, notably during the legitimacy period as China under Deng Xiaoping modernized "agriculture, industry, national defense and science and technology."⁴⁵

China is the most rapidly growing Antarctic nation in the past thirty years since its full membership in the Antarctic Treaty System in 1983, UNCLOS in 1996, and CCAMLR in 2005. China today has a footprint on the 'Ice' second only to the United States, largely achieved within the past fifteen years. China maintains four strategically located research stations. China's first station, *Great Wall*, sits strategically on the Peninsular in overlapping British, Argentinian and Chilean claim and three further bases are within the Australian claim. This includes *Kunlun*, touted as the best location for astronomical survey and communications. China's future intentions to use this base and others for its national satellite system, BeiDou, and its aim of being independent of U.S. Global Positioning Systems (GPS) by 2020, have analysts at odds. Whilst recognizing the need to improve China's satellite navigation accuracy (globally and in Antarctica), it also has military applications for navigation and targeting for guidance systems.⁴⁶ This does not provide an asymmetric advantage over the U.S. but makes the Chinese multi-domain system more resilient and resistant to future deterrence and response options.

China intends to build a fifth research base in the Terra Nova Bay area, within the New Zealand claim, that will establish a physical strategic location for future resource debates in the Ross Sea. It will not occur without difficulty, however. Location is important in Antarctica, and China as a latecomer to the Continent faces significant geographical challenges, none more so than access. China, to date, has been slow to collaborate with other Antarctic nations. This is changing as China does not have the heavy sea and airlift sustainment capabilities to be independent or operate unilaterally. Australia and China currently collaborate through necessity, China for basing access in mainland Australia and airlift, and Australia for access to capabilities (for example its

icebreaker fleet) degraded through the negligence of its Antarctic program. Bilateral agreements to ensure basing access and extend operational reach will be the cornerstone of Chinese near-term engagement, in particular with Southern Hemisphere nations, but walks a fine line to grow support in the collective governance system.

China's Use of the Elements of National Power to Prosecute its Polar Objectives

China's greater role in the leadership of the Antarctic Treaty System will lead to aggressive exploitation of the economic, information and diplomatic instruments of national power. China, like many developing countries, poses a compelling diplomatic challenge to the future governance of global commons. Whilst not dismissive of the Westphalian state system, China, India, and rising nations reject the old world order of international governance, especially in Antarctica where the extant treaty system is more like a 'rich man's club' securing the right of entry through patronage, keeping the decision-making power base small and exclusive, and treating other nations dismissively.⁴⁷ Increasingly, China is finding allied voices from nations like India, Malaysia, South Korea, who not only reject historical claims and US and Russian rights to assert future claims, but assert that it is the right of all nations to the future of the global commons, especially in Antarctica, the Arctic, and Space.⁴⁸

China cooperates with other nations in Antarctica, when it serves its purpose (i.e. to grow scientific research capacity and meet logistics shortfalls), however recent alignments point to potential bipolarization of the Antarctic in the future. China's future joint ventures with Russia in Arctic mining, research, and logistics initially in the Arctic, but with a future eye to Antarctica for deep-sea research and mining could further drive a wedge between the Antarctic western states, Russia and the newcomers.⁴⁹ Further,

as China's influence grows, so will its ability to champion developing polar nations, or challenge those with conflicting approaches or competing interests.

Economically, China is in a position to influence the future of Antarctica, particularly in the financial support to emerging nations seeking to develop their own polar programs, for research or resources purposes. Chinese, Indian and South Korean budget increases indicate their desire to "assert international influence and build national pride".⁵⁰ Collaboratively funded research, exploration, and logistics support from China will set future conditions for diplomatic alignment and support when governance structural or policy changes occur, as they must in the future Antarctic Treaty System.

China holds an ace up its sleeve that no other developing or aspiring polar nation possesses, the power of veto as a permanent UN Security Council member. The Security Council provides the authority for UNCLOS and affords China the ability to wield a soft power instrument in polar decision-making.⁵¹ Polar analysts are skeptical of China's willingness to relinquish its veto for the Ross Sea Marine Protection Area as negotiations progressed, acknowledging China's desire to rise (peacefully) to greater leadership influence amongst the established Antarctic states in the near term but setting conditions for influence on governance and resource decisions from a position of strength later.

Part 3: How Conflict with China in the Antarctic Could Occur

Conflict between China and other nation states in the Antarctic Region in the immediate future is unlikely. Antarctica does yet not rate high enough on any nation's vital or important strategic interests to go to war over. Nevertheless, tensions around resources and governance, if not resolved to the satisfaction of all states, could result in

conflict. Five scenarios exist that may see China in direct (and open) conflict with other Antarctic nations: the dissolution of the Antarctic Treaty System; challenges to China's rise; Chinese support to flagged vessels; militarization of bases; and exploitation of resources.

Dissolution of the Antarctic Treaty System

The most obvious threat to collective Antarctic security, and one that could play into China's hands, would be for the Antarctic Treaty System to dissolve, arising from current claimants pressing for resolution of claims, from an external claim, or from reframing of current claims.⁵² Further, a collective shift in Antarctic philosophy from environmental protection and science to resource exploitation could signal the demise of the system. Dissolution would require claimant nations reconsider asserting their original claims, force both the United States and Russia to declare their intention (or not) to claim some or the entire continent, and provide the opportunity for new polar powers to assert either a claim of their own, or to propose a new Antarctic governance structure.⁵³ A newly negotiated treaty or revamped system would be favorable to the national interests of China, notably the continent and convergence agreed as a global commons available for resource exploitation. China is positioning infrastructure on the continent, and growing strategic airlift, ice-breaking, and replenishment capabilities that, coupled with a growing leadership voice, could provide an asymmetric advantage over most other nations within the next ten years if the Antarctic Treaty System dissolved.

China's Ascension to Polar Leadership and Allies

China's aspirations for global leadership are not limited only to the Antarctic. Over the past decade China's realist foreign policy stance, buoyed by economic growth, reflects a more aggressive approach in the Asia-Pacific, Africa, and Latin America

regions, challenging the status quo of colonial and post-colonial western influence notably in developing countries.⁵⁴ China's State Oceanic Administration short-term policy goal of increasing Chinese "status and influence...in order to better protect China's polar rights and interests"⁵⁵ is an aggressive stance amongst polar nations.

China is a leading and growing voice in challenging the Antarctic Treaty System and, similar to other emerging Polar nations, looks to the Antarctic global commons with a sense of opportunity. The inability of the Antarctic Treaty System to arbitrate rising Polar non-claimant interests and issues including tourism, management of living resources, access to the continent, and equitable governance, will have two outcomes; either the treaty will become polarized or dissolved. Both outcomes will see China well placed to lead a new power balance.⁵⁶ Managing emerging nations, with little quality scientific research history, but who have hard and soft power options and instruments in the region, will challenge the traditional treaty nations.

Resource Exploitation

China's population growth, inequity of resources per capita, diminishing mainland mineral wealth and global resource availability to fuel China's socio-economic development and state security are the critical issues facing the country today.⁵⁷ China needs to continue to develop as a global manufacturer and exporter but also to support a growing domestic consumer society. This requires more resources than are available to China, now and in the future, in an increasingly competitive global environment.

The Chinese Academy of Sciences in 2010, assessing China's modernization progress and correlating mineral resource requirements to 2050, recognized the tension between the great demand on mineral resources, the threat to the environment, and China's lack of investment in research, exploration and development.⁵⁸ It also

acknowledged China, not resource endowed naturally, (as other countries such as the United States or Australia are) per capita has two options to secure its future: grow social wealth and infrastructure to ensure economic prosperity, or bilateral resource agreements and access to the global commons.⁵⁹ Chinese strategy intends to achieve the second option in two distinct phases: first; bilateral agreements, for example in Africa to secure mineral resources, whilst investing in research and exploration of the global commons to 2030; and second, exploitation (under permission) of the global commons in the period 2030 – 2050.⁶⁰

China is playing a long game concerning Antarctic and Southern Ocean resources, content to shape the environment over the next 15-20 years in order to exploit it from 2030. China's investment in research of the seabed and continental shelf, positioning of research stations, and support to Chinese science and technology agencies innovation intends to drive commercial exploitation costs down, modernize techniques, and limit waste and negative effects on the environment.⁶¹

Further, in aspiring to leadership within polar governance, China will be able to exert pressure on future resource decision making. Whilst China demonstrates every aspiration to do so peacefully, slow economic growth, food, energy or resource scarcity or domestic turmoil, could see China accelerate its claims to resources from the global commons with greater force. Similarly, any sovereignty ruling in favor of the Arctic states would have significant effect on China's Southern Ocean and Antarctic policies, especially for food security. Chinese response options in these instances could include formal challenges to both CRAMLR and the recent Ross Sea MPA, thereby undermining the Antarctic Treaty System. Support from other emerging polar nations

(and potentially Russia through the Security Council), facing similar resource demands would see Antarctica rise on the threat radar. Appraisals from western and eastern Antarctic scholars and commentators, mindful of growing global resource competition, agree that exploitation of Antarctica is a case of not 'if' but 'when'.⁶²

Support to Flagged Vessels

The Southern Ocean fishing grounds are increasingly an international point of tension, both between states and with non-state actors. Legal and illegal fishing fleets have long exploited the abundance of living resources in the Southern Ocean. South Pacific nations, New Zealand, and Australia are particularly active in patrolling national and international waters to deter and disrupt illegal fishing, and enforce legal quota management. The use of military capabilities south of 60° South has drawn criticism from some nations, citing that the conduct of 'military' operations is in violation of intent the Antarctic Treaty System.

China has had a poor record regarding fishing in the Southern Ocean over the past 10 years. In 2007, China refused Australian fisheries permission to board and inspect four Chinese flagged vessels caught illegally fishing in the Southern Ocean,⁶³ and in 2016, the Argentinian Coast Guard sank a Chinese flagged fishing vessel illegally fishing in a protected area.⁶⁴ China's willingness to fish international and protected areas with its own flagged vessels and to receive catches from illegal fishing (mostly from vessels flagged in African countries) will likely increase as its resource demand climbs.

China has also used some diplomatic deception, joining CCAMLR itself in 2007 but not requiring Hong Kong to seek membership. Hong Kong, argues Anne-Marie Brady is "the base of multi-national fishing company Pacific Andes, which through its

own activities and that of its subsidiaries is heavily implicated in the illegal fishing of the highly endangered Patagonian Toothfish.”⁶⁵ This political deception is not lost on the international community and damages China’s reputation within the polar community with each incident. The immensity of the Southern Ocean, and relatively few national and non-profit (i.e. Greenpeace and Sea Sheppard) assets currently conducting anti-poaching make these risks worth taking for the Chinese.

Militarization of Chinese Bases and Research Stations

The 1959 treaty decision to recognize no claimant reduced the likelihood of inter-state conflict over borders or claimant areas on the continent. However, security of state owned infrastructure, including research bases, ships, and aircraft (military and civilian) operating on, around, and above the continent are the responsibility of each nation.⁶⁶

Chinese policies including the 2005 Peaceful Development Road that seeks international cooperation and harmonious world order, and its national security strategy, evidenced by rapid increased military modernization, appear at odds. China’s unwillingness to articulate long-term political aspirations for the Antarctic Region does little to endear trust amongst other nation states.

To date, military personnel occupy no Antarctic Chinese Research Bases. They do however provide logistical support, as other polar nations do notably for the U.S., New Zealand, and Italy. China operates two icebreakers, with the intent to expand the fleet further, as do the Russians. Icebreaker capability enhances polar power and prestige. The rescue of 52 passengers from the Russian research vessel *Akademik Shokalskiy* by the Chinese icebreaker *Xuelong* in 2014 brought considerable prestige to China and signaled its presence as a polar player equal to, or surpassing, many of the established nations.⁶⁷ China’s icebreaker proficiency, however, is ahead of other

capabilities, with investment in airlift capabilities capable of sustained Antarctic logistics, Search and Rescue, or reconnaissance operations only now starting to emerge. China has shown itself willing, however, in other regions such as the Gulf of Aden to use military resources to protect merchant vessels and could arguably do so, given current and developing capabilities, in the Antarctic to protect fishing fleets or other vessels conducting exploitation research, denying boarding parties or countering area denial operations.⁶⁸

Part 4: Managing Phase Zero

Managing Chinese and other developing nations growing influence in the Antarctic requires a re-examination of national, especially in the case of the U.S., and international policies. Extending the 'planning horizon' out to at least 2048 will provide the strategic context and culminating point focus where policy (Treaty) and resource requirements collide. Shaping the environment to this point, whilst managing incidents and events through crisis and risk management will allow for polar capability development, positive bi and multi-lateral engagement, and synchronization of Antarctic policy nested to shape national interests and meet international norms. For the U.S. to continue to lead Antarctic governance, as it has directly and indirectly over the past 60 years, this will require an adjustment in approach.

The ability for the U.S. to shape the future and the behavior of other states is lessening, as it lurches from crisis to crisis across the globe, or faces regions where future hegemonies are expanding rapidly, including China in South East Asia and Brazil in South America. Crises elsewhere afford little ability to develop or implement grand strategy for a global commons such as Antarctica, which arguably does not currently threaten the survival or vital interests of America. Antarctica is a 'long game' when

addressing strategy, as global resource requirements and availability, current governance systems, and competitor capability do not signal discontent in shorter planning horizons.⁶⁹ Therefore Antarctic policy has three objectives: first, the balance of national power (and prestige) with other competing nation states in the region, notably Russia and China; second, the future access to and security of resources; and lastly, the maintenance of World Order and the U.S. leadership role within.

U.S. national interests in the Antarctica are largely unchanged since the 1959 Treaty: to maintain the region for international peaceful cooperation, to undertake scientific research to better understand the Earth's environment, to protect and preserve the Antarctic environment, and to conserve and sustain living resources.⁷⁰ The U.S. has not viewed Antarctica as a critical interest from a resource perspective. The current U.S. stance does not preclude the U.S. participating in living, mineral, and energy exploitation in the future, but the sustainability of resources garnered on the continental U.S. or through trade arrangements assures current demand, and allows the U.S. to promote Antarctic norms consistent with the original intent of the Treaty.

The application of U.S. soft power in the Antarctic contributes to national security. Whilst scientific research and unlocking the mysteries of the continent have their own quality as far as U.S. prestige is concerned, Antarctica provides opportunity to reinforce the rules-based world order in which U.S. leadership matters. The U.S. should be cognizant of its foreign assistance budget ability to develop existing and new collaborative polar partners. This counters bi or multi-polarization of the continent by potential competitors or adversaries, protects and if required, enforces the Antarctic Treaty System, and ensures capability gaps do not emerge.

The U.S. is the largest spender in the Antarctic, but competitors will outpace its capability development over the next 20 years if apportioned funding does not increase for Antarctic operations. U.S. spending since 2008 has stagnated and not even keeping pace with inflation. The U.S. rented a Russian icebreaker for the 2011 season, highlighting the deferred maintenance and upkeep of its own aging U.S. Coastguard fleet and incurring a loss in prestige as the leader in polar affairs.⁷¹

The failure of the Antarctic Treaty System would require all countries to reassess their national interests, none more so than the U.S., which would face the dilemma of asserting a claim, potentially occupying, and then defending it. Further, the U.S. would face international discord that would follow with traditional polar partners and allies such as the United Kingdom, Australia, New Zealand, Chile and Argentina. Whilst denying Russia or new potential claimants like China, South Korea, Iran, India or Turkey may be cause enough in the future, the non-recognition of claimants status quo meets U.S. current and future strategic goals of international world order and harmony and national interests more comprehensively than an arbitrated solution.⁷² A militarized Antarctica should not be a policy aim.

The future governance of Antarctica must recognize the rise of 21st Century national realist perspectives and policies that are at odds with the current 20th Century liberal system. Options for Antarctic Governance are many, and must address, or at least reflect, three aspects: first, existing territorial and sovereignty claims; second, the right to exploit resources; and last, the governance structure to remedy the global polar power imbalance. Options for management include addressing and arbitrating existing and new claims or a new international institution (i.e. a condominium pooling resources

including governance, enforcement, and shared rights) thus relinquishing the old order. Further, the UN could declare the Continent an international trustee territory (managed by commission to address norms, standards and rules), or a World Park free from resource or commercial exploitation or sovereignty claim.⁷³

Emerging nations promote an institutionalist approach to Antarctic governance that accommodates state needs and interests while maintaining cooperation and mutual benefit. Iterated policy timeframes and international norms that serve to reduce uncertainty further support this approach.⁷⁴ To achieve such an outcome however, places the United Nations, as the overarching guarantor of the current or any future Treaty, in an unenviable position arbitrating global resources to support economic and social growth of emerging nations against the requirement to preserve the planet for future generations. Reform of global institutions like the U.N. to reflect 21st Century geopolitics and the shift of traditional power base away from the West may ultimately provide the answer for Antarctica. This includes reducing the influence of Security Council permanent members exercised through their power of veto and patronage of aligned nations.

Strengthening law enforcement in the Antarctic will ensure future security. This includes international law that governs, and holds to account all countries, and non-nation state actors (i.e. engaged in fishing and tourism activities), not just the treaty signatories. Critics of the 1959 Antarctic Treaty, 1982 UNCLOS and 1991 implementing agreement, and 1985 Vienna Convention for the Protection of the Ozone Layer see it as “soft law” for they do not possess a binding requirement or enforcement authority. Further, the more states that enter the negotiation process, the more diluted resolutions

and agreements have become.⁷⁵ Managing a global commons, especially if resource exploitation or conflict occurs, requires both a preventative and dispute resolution mechanism.

The 1959 Antarctic Treaty System utilizes two methods, scientific audit (Article 3) and right to inspection (Article 7), largely unchanged since inception and symbolic of the intent of the original Treaty, scientific co-operation and peaceful resolution of disputes. Scientific audit is a poor measure of national intent or activity, seeking proof of scientific research through quantity (and arguably quality) of published works, information sharing and analysis. The right to audit (and visit) other nation scientific stations has not been pursued with vigor in the past sixty years, owing to the cost of compliance, and often viewed as an infringement on national sovereignty.⁷⁶ Strengthening the audit process, through collective audit, will promote program and national transparency and ensure adherence to international norms and treaty obligations. China could resist this initiative, especially if targeting Chinese, or other new polar nation, stations, bases and vessels. Inclusive, collaborative and fair audit programs, likely requiring self-audit of established nations by international or multi-national teams would counter any mistrust in the audit process.

Interpreting China's true Antarctic intentions is difficult, and one that both China should be wary of, lest other nations assess its true intentions to be aggressive or divergent, therefore leading to conflict. Anne-Marie Brady assessed China's strengths as being its capacity to invest in infrastructure and new facilities, and its weaknesses as the quality of research and contribution to governing bodies.⁷⁷ For China, and to some extent India and South Korea, to meet aspirational Antarctic leadership intentions,

reduce weaknesses and leverage strengths, there are two paths, unilateral development or cooperation.

International encouragement of China through a cooperative approach has threefold collective benefits: first, an inclusive and cooperative China capable of transparent quality research benefits the international order; second, resource and capability sharing and agreement strengthens all nation's capacities (and prestige) especially for Search and Rescue, basing, logistics and sustainment; and third, assuring transparency of intentions and operations.

Conclusion

Antarctica's significance in the World System is evolving from the 19th and 20th Century domination by exploration and science. Resources and economics more than research and diplomacy will determine Antarctica's future. Advancement of technology, driven by innovation and need, will see the economic viability of exploitation of the global commons and previously inaccessible domains possible.

The current Antarctic Treaty System does not meet the requirements of the 21st century international geo-political situation. The liberalist governance structure established by the polar powers of the day, whilst adjusting to address crises as they arise, including mineral and living resource exploitation and environmental issues, does not have to global 'buy-in' of realist emerging global economic and diplomatic powers, most notably China and other Asian countries.

The 20th Century Antarctic Treaty System deferred decisions until a later date as opposed to conclusively addressing national interests of sovereignty or access to resources. Establishing CRAAMA and CCAMLR out to 2048 is a win for the Antarctic environment; however, global forecasts to support population growth and resource

expenditure in the next 20 – 30 years put Antarctic liberal aspirations on a collision course with reality. The future national interests of the world's largest population, China, and other emerging nations, will see the will of treaty nations tested as it challenges for greater resource access.

China signaled its emergence as a polar power with stated goals of greater leadership in international polar organizations and securing future resources to sustain economic growth, energy and food security. China has a short polar history and one at odds with that of established nations who, through exploration, quality of scientific research, and shared collective over national values and interests, have ascended to polar leadership. China, alternately, has applied a similar approach to Antarctica as other domains and regions, utilizing its recent economic growth to speed capability growth and investment in polar infrastructure. Bullish behavior in the South China Sea gives cause for concern for Antarctic nations who fear that China's rapid station building on the continent and increasing presence in the Convergence will continue the same path, challenging other nations to defy it.

Military conflict with China or between other nations is unlikely in the immediate future in Antarctica, however future peace will depend on transparency, the ability to address national concerns and resource governance requirements, and policing established and agreed norms of behavior and compliance. If resources are going to drive future behavior in Antarctica, the global community must manage the question 'when, not if?' and put enforceable policies in place and an effective governance structure.

Addressing governance issues to manage this global commons should be the first priority for diplomats and policymakers. Dissolution of The Antarctic Treaty System would be catastrophic for the management of the continent and safeguarding of natural resources and environment. Whilst it may have had its day in its current form, the treaty still provides sound basis for collaborative future management. The establishment of a world park, dismissal of all sovereignty claims, and global governance and enforcement structure would safeguard the continent and its surrounding waters, whilst providing the legal basis for environmental protection, sustainable commercial fishing, and law enforcement by multi-national agencies.

Addressing China's Antarctic future, and that of other aspiring nations, should include a measure of both carrot and stick. Encouraging China, as a recognized polar power, to outline transparent national polar intentions and to contribute, lead and share collective scientific research will reduce tension. Where Chinese capability gaps exist in polar activities, other nations must be willing to share research and development and enable Chinese transparent polar growth and access through basing rights (for example in Australia, New Zealand and Chile). Opportunity also exists for established and emerging nations to collaborate with China for logistical sea and air sustainment, scientific research and development capabilities. Deterring China, however, off its current course could be difficult to do.

Checking China's willingness to exploit international law, take risk below the threshold for conflict, and continued military growth is important. China aspires to leadership status in international organizations, but to do so, the Chinese must abide by international and institutional norms and behavior. In Antarctica, the prosecution of

illegal fishing fleets, the use of audit and inspection of facilities (whilst being willing to accept Chinese inspection in return), and enforcing adherence to international law through the Court of Justice are required undertakings by all nations.

The U.S. must take a leadership role shaping and strengthening policies to address the current environment to ensure future conditions are favorable to U.S. national interests and the maintenance of global cooperation and the world order. Enforcement in a region as challenging and vast as the Southern Ocean is difficult. Assignment of military and multiple agency elements to multi-national taskforces is critical as is capabilities identification and funding well in advance. Procuring vessels, aircraft and to some extent expeditionary forces capable of operating in the harsh Antarctic environment cannot be done quickly. Investment by U.S. Combatant Commands with partner nations in joint operations signals U.S. intent and projects power to the region, an important factor for competing nations and non-state actors to consider.

The future of Antarctica sits below the threshold for many nations when considering future capability. However, a liberal over realist approach by nations and the collective current governance organization, assuming all nations prescribe to the existing Antarctic vision is shortsighted, as is thinking nearly 60 years without significant conflict suggests that this will continue. National energy, rare earth mineral and marine resource requirements, and in particular the intentions of China to secure its economic and social growth, suggest that nations should give further thought to how they see this truly global commons managed for the future.

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