



HD The Arctic, Antarctic and geopolitical manoeuvring

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The Arctic and Antarctic regions are melting. It's a serious environmental problem. But it's also an economic opportunity for those with a geo-political **stake** in our northern and southern extremes.

Antony Funnell: Hello, Antony Funnell here and welcome to Future Tense. We all know the gloomy environmental predictions for our polar regions.

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[Montage of gloomy polar reports]

Problematic indeed. But it would be a mistake to think that everyone views the future of the Arctic and the Antarctic in the same way. While some see melting ice and degradation, others see a future of opportunity and expansion. Companies, research organisations and governments are busy jockeying for a better seat at the polar table, both in the north and the south.

And teasing out the specifics of some of that activity is our goal today on Future Tense.

Let's start in the extreme north with Michael Byers from the University of British Columbia in Canada. He's a leading authority on international law, global politics and the Arctic.

There's been **oil** and gas exploration in the northern polar region for some time, and some see a future for the Arctic as a major source of global **energy** reserves. But in recent times both Canada and Russia have been busy talking up the potential for a dramatic increase in international shipping. So, how real is that potential? And how real is their rivalry?

Michael Byers: Well, the Arctic is an enormous region that's measured in thousands of miles, and to the degree that there is rivalry, it's rivalry to exploit the opportunities that exist within each country's own exclusive jurisdiction. So yes, there's a rivalry between Russia and Canada to develop their different Arctic shipping routes. But it's not the same Arctic shipping route, there's the northern sea route north of Russia, the northwest passage north of Canada, and yes, they're keen to attract foreign vessels to come, to seize the economic opportunity, but they're not contesting in the same space of water.

Antony Funnell: Now, talking about the Russian Arctic sea route, Vladimir Putin has said that he envisages Russia's Arctic coastline becoming a viable alternative to the Suez Canal. How serious is he about that proposal?

Michael Byers: He's serious insofar that there is already some traffic through the northern sea route, roughly 70 oceangoing vessels, international cargo voyages each summer. So on a seasonal basis in the months of July, August, September, we're already seeing commercial traffic, though nowhere near the scale that you would see through the Suez Canal, and certainly not for 12 months each year.

So when he's talking about creating a Suez Canal of the north, he is talking about a smaller, more seasonal version. But the Russians have been investing in this. They have a dozen icebreakers, they have 16 Arctic ports. They have very good aids to navigation, very good maritime charts. And they can support this kind of traffic. Other Arctic countries, notably Canada, are not as advanced in their planning.

Antony Funnell: You mentioned Canada there, they may not be as advanced, but there is a lot of political talk, isn't there, from the Harper government, about the potential that they see for the Canadian Arctic. Is it much more a case of the rhetoric not matching up to the reality where that's concerned?

Michael Byers: Well you have to remember that the Canadian Arctic is 40% of the second largest country on Earth, so there is a lot for Stephen Harper to talk about. And with that, of course, the expense that would be involved in developing a region of that size would be very large indeed. And Mr Harper has not been putting his money where his mouth is in any significant way. So people like me who do see the opportunities in the Arctic are certainly pushing him to do much more: to complete the first road to the Arctic Ocean in Canada, to build the first Arctic port in Canada, to build icebreakers that have been promised but have been languishing for decades now.

So I think the best way to describe the Canadian situation in the Arctic is that there's been a lot of talk, especially in the last seven or eight years, but as of now very little action. And so the question for Canada is not whether Russia will seek to claim part of Canada's Arctic – that's not on the cards, it wouldn't be in Russia's interests not least because it has so much of its own already. The question for Canada is whether it's going to follow that model and seize the opportunities within the Canadian Arctic that Russia is doing within the Russian Arctic.

Antony Funnell: What about the other major traditional players in the Arctic, what's their position and how has that changed in recent times?

Michael Byers: Well, it's interesting, the United States is the other truly significant Arctic country, because of Alaska. But most Americans do not think of themselves as an Arctic nation, and it has been quite frustrating for people in Alaska to see the lack of commitment, the lack of political will, the lack of financing coming from the mainland United States.

And so to give you an example here, the United States is relying on icebreakers that were built back in the 1960s, in fact bringing one of them out of mothballs to provide some essential service at the moment. And this is unsustainable. The US Congress and the White House have to get serious about making investments, including in icebreakers, if the United States is going to be a serious player in the Arctic also.

I do see some movement in that regard...certainly former US secretary of state Hillary Clinton understood the importance of the Arctic and, among other things, completely revitalised the Arctic Council, a regional organisation, while she was in the Department of State.

Antony Funnell: But as Professor Byers said, it's really Russia that's shaping up as the significant future power in the Arctic region, streets ahead of both Canada and the US in infrastructure and investment.

What's also been notable of late has been a growing interest from several non-Arctic Asian countries in all matters polar. A focus, according to Professor Byers, that's both economic and environmental.

Michael Byers: The first interest in terms of the Arctic is in understanding climate change because the Arctic is very much at the centre of climate change science given the precarious balance between ice and water and how easily that changes as temperatures rise. So **China** for instance has invested a huge amount of money in arctic science over the course of the last decade.

A second consideration for these non-Arctic countries is the possibility of shorter shipping routes and **China** and Japan, for instance, are very keen to explore those. But they're not contesting the rights of the Arctic coastal states, in fact they want to work with them, and are indeed paying for instance for ice-breaking services from Russia.

The other dimension that could be involved in this is the possibility of eventual deep sea **mining** in the centre of the Arctic Ocean, or high seas fishing in the centre of the Arctic Ocean. But the Arctic Ocean in this sense is no different from any of the other oceans in the world beyond 200 nautical miles from shore, beyond the continental shelf. There are international rights and there are international treaties to provide access to any country within certain rules.

Malte Humpert: My name is Malte Humpert and I'm the executive director of the Arctic Institute, international think tank in Washington DC.

Antony Funnell: Like Michael Byers, Malte Humpert sees enormous economic potential in the Arctic region, but as with Professor Byers, he's cautious about talk of the Arctic becoming a major international shipping route of the 21st century.

Malte Humpert: The more I look into the actual number of where the **Chinese** growth markets are, the more doubtful I really become that Arctic shipping will become a major transit route. I think for destination shipping, so delivering natural resources from the Arctic to Asia or to **China**, I think that's definitely a growth area; Russian LNG or **oil, iron ore**, that's definitely a growth market.

But when it comes to regular import-export kind of traffic, so exporting **Chinese** goods to markets, a lot of the markets are developing in the Asian region itself, so a lot of **China's** neighbours are growing quickly;

Malaysia, Indonesia, the Philippines, the Indian subcontinent as well. And then when it comes to raw materials, **China** is increasingly getting those raw materials from countries in the southern hemisphere as well; Mozambique, Brazil when it comes to **iron ore**, Australia when it comes to **iron ore**. And so I think we will see a shift southwards in terms of traffic when it comes to global traffic and also trade with **China**, **China**'s exports, **China**'s imports.

So I'm not sure that **China** will really be the growth factor or the driving factor behind Arctic shipping when it comes to economics. But then of course we have that geopolitical aspect to it as well, which you know it might not be economical for **China** in the short or medium term but there might be very long-term geostrategic kind of interests that may further the interest of **China** to really get into Arctic shipping.

Antony Funnell: But from what you're saying, the talk of the Arctic region being a major shipping area, a major shipping route in the future, is overstated, is overplayed, do you think?

Malte Humpert: I would definitely agree with that. If we look at the global distribution of major shipping, for example the Suez Canal, about 7% of global trade passes through the Suez Canal and that's taken over 100 years to kind of carve out that kind of chunk of global traffic, 7% for the Suez Canal, Strait of Malacca is about 40%, and then the Panama Canal is about 3% to 4%.

So whenever I read figures of the Arctic being host to 10% or 15% of global trade, or 25% of **China**'s trade within the next 15 to 20 or 25 years, it's just not realistic, because it takes a long time for established routes to be altered, it takes a long time to build customised ships. And in that area, too, the trend kind of goes counter to the Arctic. We're looking more and more to economies of scale, so the ships are becoming larger and larger, and the Arctic is a very hostile environment where you can't take those really large vessels. You know, you need customised ice-capable vessels that are significantly smaller than the major vessels we see today along the Suez Canal route.

So I think we will mostly see niche operators' destination shipping. I don't think it will replace the world's major routes in the foreseeable future. Eighty years from now, 100 years from now that might change, but not over the next 20 or 30 years.

Antony Funnell: Now, picking up on some of the difficulties in the region, we know that climate change is opening up the region, that it's making it more accessible to shipping, but what are some of the environmental and climate-related obstacles that still exist for Arctic shipping and are likely to still exist over coming decades?

Malte Humpert: An excellent question. Actually in the short to medium term the melting of sea ice might make shipping conditions more dangerous, more adverse, because the ice is melting so you have a lot more drift ice. While the ice used to be more contained in one continuous mass, now you have ice melting and breaking off early in the season and so you have a lot more unpredictable ice floes, where it's really hard to see which direction they go. You also have an open ocean suddenly, where **wind** can break up the ice in different patches and different sections, so all that creates uncertainty when it comes to shipping and forecasting which way the ice is moving.

So there's still a host of obstacles. Often it's pointed out that you're avoiding the Suez Canal fees or you're avoiding increased insurance rates when it comes to the Horn of Africa. But insurance rates in the Arctic are pretty high as well and you also have to pay for icebreaker fees.

So I think one really has to look at the details more carefully; the distance savings economics, what kind of cargo, what time of the year, which operators could potentially benefit. It's a very complex region, the Arctic, and so as with **oil** and gas or climate change, it's always important to really look at it from all the different angles and not just make one blanket statement or one blanket forecast.

Antony Funnell: Malte Humpert, founder and executive director of the Arctic Institute, thank you very much for joining us.

Malte Humpert: Thank you so much for having me.

Antony Funnell: Time now to head to the other end of the world and the opening of a new research facility earlier this year.

[News report of **China**'s new Antarctic station]

China's brand new research centre has sparked concerns in some quarters about a rise in geo-political manoeuvring in our southern polar region as well.

Although some nations, like Australia, have territorial claims over sections of the Antarctic, those claims aren't universally recognised. And, as with the Arctic, there's been increasing international interest in the South Pole in recent years, particularly from the growing economic powers of Asia.

So what to make of it all?

Vaughan Winterbottom is from the **China** Centre at the University of Oxford.

Vaughan Winterbottom: **China** now, with this fourth base and with a fifth base next year is set to become one of the largest presences in Antarctica. The country's scholars, and Arctic and Antarctic scholars view **China's** polar expeditions and explorations as a sign that the country is catching up. The scholars on the ground in **China** have previously referred to the Antarctica Treaty as a 'rich man's club and a collective hegemony.' They have viewed themselves in the past as second-class citizens, and this is...it's really a matter of national prestige at the moment. So after the fifth base next year, **China** will be one of the largest presences in Antarctica.

Antony Funnell: So national prestige, but there is also scientific interest?

Vaughan Winterbottom: There is scientific interest. I think the idea of opening bases there is the prestige part of it. The scientific interest really comes from this base that they opened in 2008 on Dome A, and it's really in the interior, the scientists there claim they are doing a lot of good work on investigating the planet's climate record for about a **million** years, and part of the prestige of it is they hope this research—which is being conducted with Australian, **Chinese** and US scientists combined—will **lead** to recognition of **Chinese** science in the international community.

Antony Funnell: There is an international treaty which blocks the commercial exploitation of resources in Antarctica, but I understand that that comes up for review in 2048. So is what we are seeing at the moment about national prestige, but is it also various countries including **China** perhaps jockeying for positions in anticipation of that change and what it might mean?

Vaughan Winterbottom: I think it is. It's interesting to note that the protocol you're talking about, which is the 1991 Madrid protocol, is controversial in a way in that in the 1980s, in 1988 specifically there were countries lobbying for a convention on the regulation of Antarctic mineral resource activities, and this was designed to regulate rather than prohibit entirely the exploration, prospecting, and developing of mineral resources.

Countries at the time, including Australia, recognised that under that 1988 convention they could have vetoed any **mining** activity that was proposed in Antarctica. Perhaps for political reasons and perhaps for a growing environmental lobby in Australia, Australia chose to tear up that convention and push for this protection of the Antarctic Treaty. I think by 2048 the conditions will have changed considerably and there will be a lot more pressure, not only from **China** but also from other countries such as Russia and even the US to review this treaty. So **China** wants to get a foothold on the ground now to ensure it's got a seat at the bargaining table.

Anne-Marie Brady: There are different ways to look at a country's respective power and capacity in Antarctica, and certainly **China** is clawing its way up to being one of the stronger and more active states involved in the Antarctic continent. They certainly have a lot more capacity to be active throughout the continent than, say, Australia does, which claims 42% of Antarctic territory.

Antony Funnell: Anne-Marie Brady is a leading expert on Antarctic affairs. She's a Fellow with the Woodrow Wilson Centre in Washington and a professor in Political Science at the University of Canterbury in New Zealand.

2048 she agrees will be an interesting year for the future of the Antarctic. And she says the eventual opening up of the region for commercial resource exploitation is looking increasingly likely.

Anne-Marie Brady: You have this political correctness at the moment for countries like Australia and New Zealand and the United States and just about everybody else, not talking about Antarctic mineral resources. I'll give you an example of this political correctness; an Australian scientist happened to discover some diamond-bearing rocks in Antarctica a few months ago, and no, he wasn't exploring or trying to investigate whether or not such minerals would exist in Antarctica, because that's not the done thing in countries like Australia or New Zealand or the United States because of the Madrid protocol that was signed in 1991 that has said that there will be a moratorium placed on either exploring for or extracting mineral resources in Antarctica.

However, countries like **China**, Russia, Korea, India...where the difference is is that they talk openly about...at least in their own sources and in their own languages, about the potential of Antarctic mineral resources, and either they are very suspicious of other countries, that they are engaging in prospecting, or

they themselves are actually doing some preliminary forms of prospecting through the guise of science. So that's the difference there, and I think why I say it's a difference for now is that the Convention on the Regulation of Antarctic Mineral Resource Activities, or CRAMRA, which is the big issue of the '80s, which would have permitted mineral exploitation in Antarctica, was signed by all the countries. It was only the fact that in the end two countries, namely France and Australia, would not ratify it, that that agreement did not come into force.

So if all those countries, including Australia and New Zealand and the United States, could agree to it at that time, I don't think we should be terribly surprised after 2048 when the Madrid protocol could then be revisited if a consensus once again would be found on this topic.

Antony Funnell: So in that sense, if you had to put money on it, you would put money on the idea that exploration of minerals, of resources in the Antarctic is inevitable after that point in time. Is that correct?

Anne-Marie Brady: Not necessarily because public opinion is very important, that's what shifted the governments of France and Australia. So I think if there are people in the world who believe that Antarctica is a very special part of the world that should be left as it is, a wilderness and a relatively pristine environment, then they are the ones who should be pressuring their governments to follow the position that it is unacceptable to mine Antarctica. But I think it's going to be a lot harder to get agreement on that in 2048 than it was in 1988/89 or at least the change of opinion that came about in 1989, because by 2048 or the middle of the century when we can expect that negotiations will come up again on the issue of Antarctic mineral resources, we will be in a different scenario for what **oil** and gas resources are available for exploitation. The sources that countries rely on these days will have passed their peak, and so eyes will be turning to Antarctica. There will be technological advances that there weren't in the 1980s, and the cost and feasibility of the mineral exploitation will be much more realistic than it was by the end of the '80s where it was really just a preventative agreement which had been proposed by New Zealand, this agreement to say, well, some countries are interested in the issue of mineral exploitation, if you are going to do it let's put some environmental protocols on it.

Antony Funnell: And as you point out, the potential exploitation of resources is the main point of discussion in **Chinese** language popular science discussions, isn't it.

Anne-Marie Brady: Well, for social science it certainly is. I mean, the scientists would beg to differ because they do look at a range of issues. And **Chinese** social science writing on Antarctica, the issue of resources is one that comes up again and again, and not just the mineral resources; fishing, the unresolved issue over the extended seabed in Antarctica, you know, who has rights to them, water because Antarctica is one of the places in the world where there is a very large supply of fresh water, tourism, meteorites, there's a whole range of things that could be called Antarctic resources.

And certainly social scientists in **China** who are looking to examine what **China's** rights are there and what opportunities there are in there are very interested in these aspects of Antarctica, but in that they are not unlike other countries, but as I said, I think there is a political correctness at the moment in the mainstream of countries who have been involved in Antarctica which cautions them somewhat in terms of the way that they talk about many of those resources.

Antony Funnell: Now, as Professor Brady mentioned, the polar resources that many countries and companies are now eyeing-off aren't just **energy**-related; **oil** and gas for instance. One area of scientific and commercial interest that's long been under debate is bio-prospecting, that is the harvesting and utilisation of polar microbes and marine organisms for use in the modification of drugs and foodstuffs.

Dr David Leary is a senior lecturer in Law at the University of Technology, Sydney.

David Leary: It has actually been an issue that has occupied the diplomats and the policymakers in the Antarctic treaty forum for over a decade now, and it's a growing activity in terms of the commercialisation of both Antarctic and Arctic biodiversity. And what has happened is there has been this debate but the policymakers have not yet been able to address some of the problems that have been identified. And those problems are primarily a continuation of the debate that we saw in developing countries about access to biodiversity and who should share in the profits that come from access to the genetic resources of the biodiversity of the rainforest et cetera. Similar sorts of debates in the Antarctic context about who should actually share in the benefits of commercialisation there. So yes, we are seeing increasing levels of commercialisation in the genetic resources of both the Antarctic and the Arctic, I might add.

There is plenty of evidence now of the extent of commercialisation, there's products on the market that have being commercialised from Antarctic and Arctic biota. One of the key areas, for example, is antifreeze proteins because of the ability of some organisms to live in the water without freezing. They have some interesting industrial and food technology properties, for example Ben & Jerry's ice cream. They already have developed some antifreeze proteins which they include in some of their ice cream products that have

come from Arctic eelpout or Arctic fish. So there is already a whole range of other products that we could point to that have come from both Antarctica and from the Arctic.

The question is, and this is where we are still trying to grapple with the process of how it's happening, is this embedded into the mainstream scientific research, is it the scientists who are going...you know, as part of their research projects and collecting these species of interest and going back and looking at them in the lab, is that where it's occurring or are there separate...you know, are there companies that are mounting expeditions for bioprospecting. Well, I think it's more the former than the latter. There's very little evidence of actual companies going down there themselves. They are getting access to a lot of this information through cooperation with national scientific research programs. There's actually a number of national scientific research programs that have it as a core priority. South Korea, for example, has a very, very significant interest, as does the emerging Malaysian Antarctic program. One of their key priorities is looking at prospects for commercialisation of some of this biodiversity.

So it's happening in the context of the existing scientific research which is purely lawful and exactly what the Antarctic treaty system was designed for. But it does then raise a whole range of other questions about the consistency with the existence of Antarctica as a zone of scientific research and scientific endeavour. Questions have been raised by others as to whether that fundamentally undermines the core pillar of Antarctic governance, which is freedom of scientific research and an emphasis on pure science. The difficulty is separating the difference between pure science and commercial research and at what point that comes. That's a problem not unique to Antarctica. There is exactly the same debate that is occurring on the high seas and in the deep sea in relation to some discussions that are going on at the United Nations at the moment in relation to the status of marine genetic resources in areas beyond national jurisdiction. So it's a complex problem, and Antarctica is not unique in having to try to deal with this. But it has made very little progress over the last decade or so in relation to the debate on this issue.

Antony Funnell: Dr David Leary from the University of Technology, Sydney. You can listen again to this program on geo-political manoeuvrings and the future of the Arctic and the Antarctic by going to the Future Tense website. You'll also find a transcript there.

RN is partnering this year with the forthcoming culture and technology event Remix Sydney, which is being held late next week. I'll be there and so will the winners of the RN Remix competition which was launched on the RN website.

Entrants were asked to describe, in a short paragraph, how they thought technology would enable new forms of creation and participation in arts and culture.

I was one of the judges and I'm pleased to announce our winner was Carol Omer from South Australia. The runners-up were Zoe Mellick from Queensland, Kate Eltham also from Queensland, and David Eckstein from New South Wales.

You can search the details on the RN website.

Thanks to my co-producer Andrew Davies and sound engineer Peter McMurray. I'm Antony Funnell, until next time, cheers!

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