

States and its allies, including claims that the US created COVID-19 in a laboratory in the state of Georgia.⁸⁰

China is also implicated in creating COVID-19 disinformation, reportedly including a March 2020 campaign to promote the claim that the United States government was using the military to lock down the entire country.⁸¹ China has similarly promoted the claim that the United States created COVID-19 as a biological weapon.⁸² China's disinformation campaigns also targeted Europe, with the result that in June 2020 the European Commission for the first time explicitly named China as having "engaged in targeted influence operations and disinformation campaigns in the EU".⁸³

In addition to this, key US officials in the Trump Administration promoted misinformation by accusing China of manufacturing COVID-19 as a biological weapon, although the literature does not suggest that the United States government agencies have conducted organised disinformation campaigns on COVID-19 in the manner that China or Russia has, such as through fake social media accounts. COVID-19 disinformation has also been promoted by non-state actors, such as the QAnon movement in the United States.⁸⁴ Given the wide range of actors either actively promoting COVID-19 disinformation, or inadvertently sharing misinformation, the "infodemic" has impacted countries across the world, including Australia.

COVID-19 and Victoria

Given that it is a global pandemic, Australia was quickly impacted by the COVID-19 crisis, experiencing its first case in late January 2020.⁸⁵ However, throughout 2020 Australia tended to experience far less harm than many other countries, including the United States and much of Europe, in part due to its initial response. Like several countries in Asia,⁸⁶ Australia took swift action to help reduce the spread of the virus, including travel bans on China and other countries where the virus had gained traction. Nonetheless, COVID-19 cases were discovered in Australia in January 2020 and by March the virus began spreading throughout the community, particularly in Victoria and New South Wales. Further measures were enacted, at both Federal and State levels, such as large-scale testing, contact-tracing efforts, mask-wearing (both voluntary and mandatory), and a range of restrictions to impose physical distance between members of the public. By the end of 2020, nearly 30,000 Australians were known to have contracted the virus and over 900 had died.⁸⁷

The State of Victoria has thus far been hit harder by the pandemic than other Australian states and territories. The first wave was brought under control by May 2020, but a second wave was seeded from the state's hotel quarantine program, and began to spread in the community in the middle of 2020.⁸⁸ At its peak on 25 August 2020, there were 725 new confirmed cases in a single day.⁸⁹

⁸⁰ "Coronavirus," February 7, 2020.

⁸¹ Wong, Rosenberg, and Barnes, "Chinese Agents Helped Spread Messages That Sowed Virus Panic in U.S., Officials Say."

⁸² Kurlantzick, "How China Ramped Up Disinformation Efforts During the Pandemic."

⁸³ Rankin, "EU Says China behind 'huge Wave' of Covid-19 Disinformation"; "Coronavirus," October 6, 2020.

⁸⁴ Gunia, "The U.S. Exported QAnon to Australia and New Zealand. Now It's Creeping Into COVID-19 Lockdown Protests."

⁸⁵ Health, "Coronavirus (COVID-19) Current Situation and Case Numbers."

⁸⁶ Weber and Gilman, "The Long Shadow Of The Future"; Cha, "Asia's COVID-19 Lessons for the West."

⁸⁷ Health, "Coronavirus (COVID-19) Current Situation and Case Numbers."

⁸⁸ Butt, "Ten Graphs That Show the Rise and Fall of Victoria's COVID-19 Second Wave."

⁸⁹ Macali, "Daily Confirmed Cases in Victoria - COVID LIVE."

The Victorian government eventually brought the second wave under control, to the extent that no new community-transmitted cases were confirmed in the months of November and December 2020.⁹⁰ This had rarely been achieved elsewhere in the world.⁹¹ However, the success was not inevitable. The response required millions of people to change their behaviour. The public endured restricted mobility and isolation, to endure economic strain and uncertainty, in hope that the plan worked out. Many factors could have undermined the response, including security threats such as foreign disinformation.

Foreign disinformation and Victoria's response to the COVID-19 pandemic

Contestation and dissent over the Victorian government's response to the COVID-19 pandemic should not in any way be considered a national security concern in itself. There were many criticisms of the Victorian government's response, as is appropriate in a democracy. Some criticism would have been well-informed, some would have been poorly-informed, but none should be considered to be security concerns in themselves. However, *foreign-orchestrated disinformation campaigns* are a national security concern, as a form of foreign interference, and they have the potential to impact the democratic political process within Victoria and undermine the response to the COVID-19 pandemic.⁹²

There is some evidence of Victoria being the direct target of disinformation campaigns. This was apparent in August 2020, when the hashtag #DanLiedPeopleDied trended on Twitter. The Twitter account that initiated the hashtag was anonymous, using an image of Les Patterson as their profile picture. Before February 2020, the account had only Tweeted in Arabic about Egyptian politics. This "sudden switch in personas and topics is a pattern often seen in fake accounts used in disinformation operations."⁹³ Moreover, many of the accounts that amplified the tweet were similarly inauthentic.⁹⁴ This does not mean that most of the people who used the hashtag were themselves participating in the spread of disinformation, rather than using their democratic rights to express their beliefs. But it lends weight to the argument that the hashtag was initially created as part of a disinformation campaign perpetrated by a foreign principal.

Such evidence of Victoria being the direct target of disinformation campaigns is relatively rare, but there is also the prospect of Victoria being indirectly impacted by disinformation campaigns. Indeed, the literature emphasises that indirect impacts are typical of disinformation campaigns.⁹⁵ There has certainly been misinformation and conspiracy theories spread in Victoria, some of which would have originated in, or been amplified by, disinformation campaigns.

This can have serious public health consequences. In February 2020 the World Health Organisation's director of Infectious Hazards Management warned that false information can increase the risk of avoidable public noncompliance with health measures, given that "what is at stake during an outbreak

⁹⁰ Macali.

⁹¹ Toole, "Victoria's COVID Success Rates Highly Worldwide"; Toole, "Of All the Places That Have Seen off a Second Coronavirus Wave, Only Vietnam and Hong Kong Have Done as Well as Victorians."

⁹² In other words, democratic principles dictate that while foreign-orchestrated disinformation campaigns pose a national security concern, political dissent does not. To the extent such dissent was exacerbated by foreign disinformation, it is still the foreign disinformation that should be considered that should be considered the security concern, not the dissent. Similarly, a security concern can be posed by dissent being expressed through violent means (such as terrorism), but again in a democracy it is not the dissent that poses the security concern but its violent expression.

⁹³ Graham, "The Story of #DanLiedPeopleDied."

⁹⁴ Graham.

⁹⁵ Rid, *Active Measures*.

is making sure people will do the right thing to control the disease or to mitigate its impact.”⁹⁶ As others have noted, the “infodemic” has “real-world health impacts because it creates confusion and reduces the effectiveness of public health advice.”⁹⁷ For example, in the week ending 3 July 2020, over 164,000 Victorians were tested for the coronavirus. However, a further 10,000 people refused to be tested, and the then Health Minister Jenny Mikakos stated that this was in part because some were claiming that “coronavirus is a conspiracy”.⁹⁸ In August 2020 Victoria Police Assistant Commissioner Luke Cornelius lamented that the “tin foil hat brigade” were disrupting the response to the pandemic.⁹⁹

However, on the whole Victoria has so far provided an example of a largely successful response to the planetary health crisis of COVID-19. The impact of disinformation, and consequent misinformation and conspiracy theories is as yet unclear as the global pandemic continues to unfold. Within Victoria, the impact of disinformation appears to have been insufficient to prevent a successful response so far, though it remains to be seen if there will be further outbreaks or if there will be significant problems of non-compliance when vaccines are distributed.¹⁰⁰ The reasons for the relatively limited impact of disinformation in Victoria are worthy of further investigation. In April 2020, Damien Spry wrote that “[f]or Australia, the grim lesson is that the online communications environment shares many of same characteristics that make the US vulnerable.”¹⁰¹ Yet, Victoria’s (and more broadly Australia’s) relative success so far suggests that there may have been mitigating characteristics that reduced the impact of disinformation. One possibility could be greater levels of trust and resilience.

Disinformation, trust and resilience

The literature examined for this case study emphasised that a key criterion for susceptibility to disinformation is, “a population sufficiently distrustful of authority, especially politicians and mainstream media.”¹⁰² This suggests that higher levels of trust in traditional authorities can reduce the impact of disinformation. Consistent with this argument, some of the literature contended that that trust should be seen as a *strategic resource* for democracies.¹⁰³ Therefore, it is not only the case that disinformation can reduce trust, but disinformation gains traction due to a *prior* lack of trust in governments and other traditional institutions.

This raises the importance of understanding the reasons behind distrust of governments and other traditional institutions. Some research highlights that distrust can result from unsatisfactory interactions with public services.¹⁰⁴ Some research notes that political dynamics such as polarisation and partisanship drive distrust of traditional media.¹⁰⁵ Some research shows that the drivers of distrust in a range of institutions vary for different groups, depending on gender, age, education, employment

⁹⁶ Zarocostas, “How to Fight an Infodemic.”

⁹⁷ Wake, “Doom Surfing and Fact Checkers Prosper in Covid-19 Infodemic.”

⁹⁸ Dexter, Fowler, and Calligeros, “Victoria Confirms 66 New Cases, Suburbs Outside Lockdown Zone Record High Number of Infections”; Khalil, “Under the Influence.”

⁹⁹ Paynter, “‘Batsh*t Crazy.’”

¹⁰⁰ McDonald, “As Vaccines Arrive, Australia Struggles With COVID-19 ‘Infodemic,’ Too”; Bogle and Zhang, “Chinese and Russian Influence Campaigns Risk Undermining Covid-19 Vaccination Programs.”

¹⁰¹ Spry, “Information Warfare in the Theatre of Covid-19.”

¹⁰² Spry.

¹⁰³ Bienvenue and Rogers, “Strategic Army.”

¹⁰⁴ Rutter et al., “Earning and Sustaining Citizen Trust”; “Trust in Government.”

¹⁰⁵ Suiter and Fletcher, “Polarization and Partisanship.”

and other factors.¹⁰⁶ Other research argues that distrust is driven by well-founded concerns over policy failures and scandals, with the 2003 Iraq war and 2008 global financial crisis serving as recent examples, just as the Vietnam War, the Watergate scandal and the economic turmoil of the 1970s helped to drive distrust of government for an earlier generation.¹⁰⁷ Many governments and other traditional institutions can be credibly accused of failing to respond effectively to the COVID-19 pandemic, and these failures can drive distrust and increase public susceptibility to disinformation, even as disinformation itself contributes to further distrust.

Some caveats are needed. First, distrust is not always harmful. Charles Tilly has argued that a degree of distrust is necessary for democracy to function.¹⁰⁸ Second, trust is not necessarily the norm. There has always been some level of public distrust of governments and other institutions. However, the research does show that such distrust has increased over recent decades, in Australia and elsewhere.¹⁰⁹ Therefore, while tackling disinformation cannot be reduced solely to rebuilding trust in governments and other traditional institutions, it does appear to be part of the solution.

Some of the literature examined for this case study conceptualises distrust as just one component of a broader lack of *resilience*. The origins of the concept of resilience lie in engineering and complex adaptive systems theory, but it has since become popular in policy-making. Definitions vary but, at its core, resilience refers to “the ability of something or someone to cope in the face of adversity – to recover and return to normality after confronting an abnormal, alarming, and often unexpected threat.”¹¹⁰ The concept can be applied to “materials, species, ecosystems, people, communities, organisations and even nations”.¹¹¹ Importantly for this project the concept differs from *security* (though it is closely related) as it is not primarily about preventing threats but recovering from their impact. Resilience “refers not simply to safety or security but to the capacity of a system to recover from perturbations (changes and shocks) in its environment.”¹¹²

Some of the research examined for this case study specifically examined *societal resilience to disinformation*. Edda Humprecht *et al.* synthesised some of this literature to propose that the following factors are associated with lower levels of resilience to disinformation (specifically online disinformation):¹¹³

- Polarization of Society
- Populist Communication
- Low Trust in News
- Weak Public Service Media
- More Fragmented, Less Overlapping Audiences
- Large Ad Market Size
- High Social Media Use

¹⁰⁶ Kavanagh et al., “The Drivers of Institutional Trust and Distrust.”

¹⁰⁷ Balkin, “The Recent Unpleasantness: Understanding the Cycles of Constitutional Time,” 285.

¹⁰⁸ Tilly, *Democracy*.

¹⁰⁹ Evans, “Trust in Politicians and Government Is at an All-Time Low. The next Government Must Work to Fix That.”

¹¹⁰ Mcaslan, “The Concept of Resilience: Understanding Its Origins, Meaning and Utility,” 1.

¹¹¹ Mcaslan, 1.

¹¹² Taylor, “What Resilience Really Means as a Guide for Australian Policymaking.”

¹¹³ Humprecht, Esser, and Van Aelst, “Resilience to Online Disinformation.”

To assess these propositions, Edda Humprecht *et al.* gathered data on 18 Western democracies.¹¹⁴ They argued that the United States has a distinctively “low trust, politicised and fragmented” environment compared to other Western democracies, making the society more susceptible to online disinformation.¹¹⁵ In contrast, they argued that Northern and Western European democracies such as Finland, Denmark and the Netherlands, had a “media-supportive, more consensual” environment, making them more resilient to online disinformation.¹¹⁶ Australia was not included in their study, which points to an avenue for further research.¹¹⁷

Overall, it appears that foreign-orchestrated disinformation, and broader misinformation, had a relatively limited impact on the response to the COVID-19 pandemic in Victoria compared to some other contexts. The literature examined for this case study suggests that this could be because Victoria had higher levels of trust and resilience, and highlights potential sources of distrust and potential indicators of resilience. Examining how well-founded this argument is, and identifying whether there is indeed a strong relationship between distrust, low resilience, and susceptibility to disinformation in the specifically Victorian or Australian context, is an important task.

Potential measures against disinformation

The literature highlighted multiple measures that can be taken against foreign-orchestrated disinformation, providing options to mitigate the impact of disinformation on responses to the COVID-19 pandemic.

One measure is *suppression*, in the form of media organisations and social media platforms removing false information and banning entities that promote false information. Such measures were taken to limit the spread of misinformation and disinformation during the 2020 US Presidential and the subsequent attack on the Capitol. These measures were also taken in response to COVID-19 disinformation, with a prominent example being Facebook shutting down the case of an Australian celebrity chef for violating misinformation policies.¹¹⁸

Another measure is *retaliation*, which could include legal or financial sanctions on foreign state and non-state behind disinformation campaigns, or offensive cyber operations to disrupt such campaigns.¹¹⁹ Australian involvement in any such measures would likely be undertaken in coalition with other democracies.

Another measure is *fact-checking*, also referred to as *debunking*. Some of the literature was sceptical of this approach, arguing that remedies based on fact-checking would be ineffective, and that the modern information environment has destabilised notions of “truth” and consequently means that

¹¹⁴ Humprecht, Esser, and Van Aelst.

¹¹⁵ Humprecht, Esser, and Van Aelst, 508.

¹¹⁶ Humprecht, Esser, and Van Aelst, 507.

¹¹⁷ This does not mean that every factor apparently associated with reduced resilience should be seen as negative. For example, if social media is associated with reduced resilience, it does not follow that social media is the problem or that the solution is less social media. Instead, it might be that disinformation spreads easily through social media because all information spreads easily through social media, and that the solution lies in finding ways to ensure that greater amounts of quality information spread through social media.

¹¹⁸ AAP, “Facebook Shuts down Pete Evans’ Page for Repeated Misinformation about Coronavirus.”

¹¹⁹ Polyakova and Fried, “Democratic Offense Against Disinformation.”

providing correct facts achieves little.¹²⁰ However a number of recent studies provide evidence that fact-checking be quite effective in certain circumstances.¹²¹

Another proposed measure was called *prebunking*. This literature contended that actions can be taken to “inoculate” against the spread of disinformation.¹²² One study exposed participants to weak examples of the argumentative techniques used in disinformation campaigns, and found that the participants were then more likely to recognise disinformation in its stronger forms.¹²³

Some of these measures, such as suppression and retaliation, can be considered as *security* measures intended to limit the spread of disinformation. Other measures, such as debunking and pre-bunking, can be considered as *resilience* measures intended to reduce the societal impact of disinformation (the distinction between the two will not always be clear). None of these measures necessarily address structural factors that contribute to distrust of governments and traditional institutions, or address broader societal vulnerabilities, which potentially limits their effectiveness. For example, how much can social media companies achieve through content moderation efforts in a context where “big tech” is distrusted across the political spectrum?¹²⁴ Further research is needed on the effectiveness of such measures, as well as on the drivers of distrust and sources of resilience.

Relevance of other security threats and security measures

There are also security threats, other than foreign-orchestrated disinformation, that have had the potential to undermine response to the COVID-19 pandemic in Victoria or more broadly Australia. For example, terrorist attacks can increase polarisation and potentially reduce societal resilience. Cybersecurity threats, in the form of ransomware attacks on hospitals, could also impede an effective response. A number of institutions in Australia, including hospitals, were hacked in a series of attacks in early 2020 that the Federal government attributed to China.¹²⁵ The 2017 Wannacry ransomware attacks harmed healthcare systems in multiple countries, and a similar recurrence could cause greater harm in the context of the COVID-19 pandemic.¹²⁶ The pandemic also has implications for great power competition, as some of the literature warns that the need for lockdown measures reinforces “digital authoritarianism”, in turn heightening tensions between authoritarian regimes and democracies with the potential result of undermining international cooperation to address the pandemic or other planetary health crises.¹²⁷

In addition, security measures could themselves potentially undermine the response to the COVID-19 pandemic or other planetary health crises. For example, attempts to suppress disinformation, such as through social media regulation or traditional institutions, could inadvertently suppress quality information. After all, the traditional institutions do not have a perfect track record; there are many examples of mainstream media misreporting on COVID-19, and the World Health Organisation had been credibly accused of proving unreliable at times, due to its deference to China’s position on

¹²⁰ Sacasas, “The Analog City and the Digital City.”

¹²¹ Nyhan, “Five Myths about Misinformation.”

¹²² van der Linden and Roozenbeek, “The New Science of Prebunking.”

¹²³ van der Linden and Roozenbeek.

¹²⁴ Sacasas, “The Analog City and the Digital City.”

¹²⁵ Hitch and Probyn, “China Believed to Be behind Major Cyber Attack on Australian Governments and Businesses.”

¹²⁶ Ranger, “Don’t Forget about WannaCry.”

¹²⁷ Khalil, “Digital Authoritarianism, China and COVID.”

Taiwan.¹²⁸ This raises the question of whether suppression efforts by traditional institutions will genuinely improve the information environment.

Another risk that security-focused attempts by states to respond to the COVID-19 crisis (such as jostling over supply chains or seeking to secure preferential access to vaccines) ends up undermining international cooperation against the pandemic. Such outcomes would depend on the decisions taken by national governments and transnational institutions, but could impact how the pandemic plays out in Victoria.

In short, foreign-orchestrated disinformation is a security threat that can challenge planetary health either by itself, or in conjunction with other security threats such as terrorism, ransomware attacks, and heightened international competition, or in part due to responses it might provoke. Foreign-orchestrated disinformation may have undermined effective responses to the COVID-19 pandemic in various contexts. Fortunately, its impact within Victoria, and Australia more broadly, appears to have been limited so far. There are opportunities to learn from this, as discussed in the avenues for future research below.

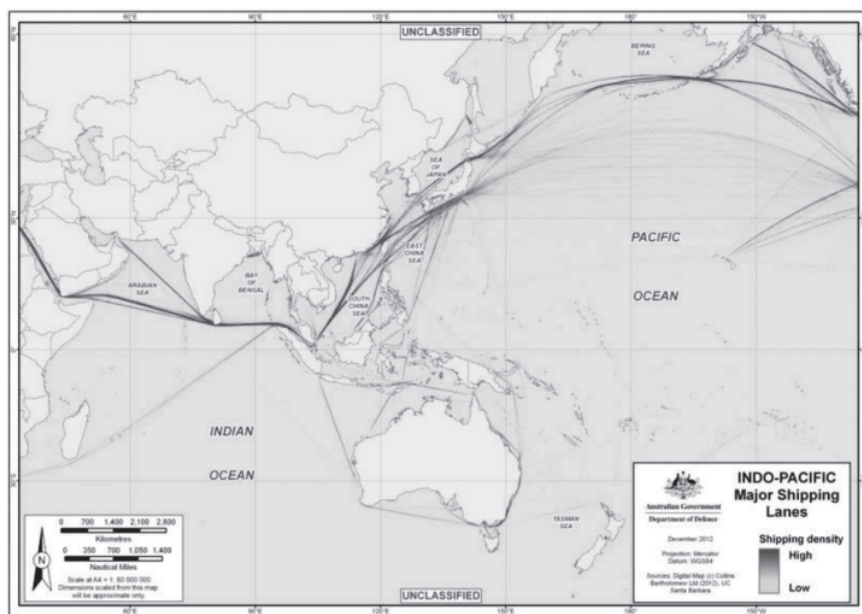
¹²⁸ “[I]n deference to China’s sovereignty claims over Taiwan, the World Health Organization offered the country no assistance against COVID-19 and underutilized the data it provided.” See: Weber and Gilman, “The Long Shadow Of The Future.”

Case study two: South China Sea maritime security

This case study examines maritime security threats in the Indo-Pacific region and their relevance to planetary health. The study focuses on state-based threats in the form of China's grey zone activities in the South China Sea, particularly the construction of artificial islands, along with the broader challenge posed to the operation of the United Nations Convention on the Law of the Sea.

Indo-Pacific maritime security

The Indo-Pacific is a geographic construct that has recently replaced the Asia-Pacific as a way of understanding Australia's place in the world. The construct was adopted in part to reflect the geographic reality that Australia straddles both the Indian and Pacific oceans. It was also adopted to reduce the centrality of China, which was perceived to be implicit in the idea of the Asia-Pacific, and to acknowledge India as another rising power.¹²⁹ The precise boundaries of the Indo-Pacific remain debated, but the map below was used in the *2013 Defence White Paper* and is broadly consistent with maps used in later government publications:¹³⁰



The Indo-Pacific construct was formally adopted by the Australian government in the context of economic power shifting to the region (also captured in the idea of the Asian Century) and the rise of strategic competition between the United States and China.¹³¹ Developments in the region have posed a range of security challenges, including maritime security challenges.

Maritime security is an “umbrella term that refers to a wide range of different security challenges at sea.”¹³² These challenges include non-state threats such as piracy, maritime terrorism, human trafficking,

¹²⁹ Medcalf, *Contest for the Indo-Pacific*.

¹³⁰ “Defence White Paper 2013,” 13. The other government publications include the 2020 Defence Strategic Update and the 2020 update to the Army’s Contribution to Defence Strategy. See: “2020 Defence Strategic Update,” ii–iii; “Army’s Contribution to Defence Strategy, Edition Two,” 15.

¹³¹ “Australia in the Asian Century”; Medcalf, *Contest for the Indo-Pacific*.

¹³² Bueger, Edmunds, and Ryan, “Maritime Security,” 973.

drug and arms smuggling, illegal fishing, and various other sorts of “blue crime”.¹³³ These challenges also include state-based threats involving “intensified naval, geopolitical and legal competition at sea.”¹³⁴ The Indo-Pacific’s main arena for such competition has been the South China Sea.¹³⁵

State-based maritime security challenges in the South China Sea

The South China Sea is a maritime area encompassing approximately 3 million square kilometres.¹³⁶ It is one of the most biodiverse areas in the world, making its marine environment important for planetary health.¹³⁷ It holds economic importance due to its fisheries, oil and hydrocarbon reserves, and as a place of transit for global shipping (as shown in the map above). The area has also been a site of tension between the United States and China. The United States has accused China of posing a threat to freedom of navigation and trade, of potentially seeking to use the region as a means to project military force further abroad, and of challenging the international “rules-based order”.

The widely-debated idea of the “rules-based order” generally refers to the current system of international law for resolving disputes, the most important part of which for the South China Sea is the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which was codified in 1994.¹³⁸ UNCLOS created a “layered sovereignty regime” that distinguished between “sovereignty” and “sovereign rights”. Sovereignty is exerted over land and allows for the enforcement of domestic law. Sovereign rights are exerted over the water further out from land, and are not generally equivalent to enforcement of domestic law.¹³⁹

Under UNCLOS, sovereign rights take multiple forms depending on the distance from land. Territorial Waters, extending 12 nautical miles out from land, can be subjected to domestic laws and regulations, but foreign vessels must be allowed “innocent passage”.¹⁴⁰ The Contiguous Zone, extending 24 nautical miles out from land, can be subjected to domestic laws but only over specified issues such as “pollution, smuggling, taxation, customs and immigration”.¹⁴¹ The Exclusive Economic Zone (EEZ), extending 200 nautical miles out from land, provides a state with exclusive rights over natural resources (such as fisheries) but also provides rights to other states such as “navigation, overflight, and to submarine pipes and cables.”¹⁴² As sovereign rights are based on distance from land, maritime law often involves heated debate over *what constitutes land* (such as the difference between an island, a reef and a rock) and over who owns particular pieces of land.

In the South China Sea, six different states claim sovereignty over some of its land features: China, Vietnam, The Philippines, Malaysia, Brunei, and Taiwan.¹⁴³ These land features include two main

¹³³ Bueger and Edmunds, “Beyond Seabindness”; Bueger, Edmunds, and Ryan, “Maritime Security”; Bueger and Edmunds, “Blue Crime”; DeSombre, “The Security Implications of Fisheries”; Lindley, Percy, and Techera, “Illegal Fishing and Australian Security.”

¹³⁴ Bueger, Edmunds, and Ryan, “Maritime Security,” 972.

¹³⁵ Other arenas for such competition in the Indo-Pacific include the East China Sea (which has experienced tensions between China, South Korea and Japan), the Taiwan Straits (between China and Taiwan), and the Straits of Hormuz (between Iran and the Gulf states).

¹³⁶ Strating, “Norm Contestation, Statecraft and the South China Sea,” 2.

¹³⁷ Smith et al., “Evidence of Environmental Changes Caused by Chinese Island-Building”; Roe, “Biodiversity Loss—More than an Environmental Emergency.”

¹³⁸ Strating, “Maritime Disputes, Sovereignty and the Rules-Based Order in East Asia,” 451.

¹³⁹ Strating, 451.

¹⁴⁰ Strating, 453.

¹⁴¹ Strating, 453.

¹⁴² Strating, 453.

¹⁴³ Strating, “Norm Contestation, Statecraft and the South China Sea,” 2; Panda, “South China Sea.” Many states who do not belong to one of the six claimant states take a strong interest in the dispute, including the United States, India, Indonesia and Australia.

clusters of islands, the Spratly Islands and the Paracel Islands, and a range of other “islands, rocks, reefs, submerged shoals and low-lying land elevations.”¹⁴⁴ The most assertive territorial claims come from China, which in 2009 presented a “9-dash line” that appeared “to denote a claim to around 90 percent of the sea.”¹⁴⁵ China is not the only contentious maritime actor in the South China Sea, as many states in the region have been making claims that are not yet settled by law. However, a 2016 arbitration ruling firmly in favour of the Philippines showed that many of China’s claims have a doubtful legal basis.¹⁴⁶ China’s maritime claims have also been far more expansive than those made by other claimant states, as shown in the map below:¹⁴⁷



¹⁴⁴ Strating, “Norm Contestation, Statecraft and the South China Sea,” 2.

¹⁴⁵ Strating, 5.

¹⁴⁶ Williams, “Tribunal Issues Landmark Ruling in South China Sea Arbitration.”

¹⁴⁷ Voice of America, *English*. (public domain)

China's grey zone activities in the South China Sea

China has been pursuing its claims through assertive tactics.¹⁴⁸ These tactics involve what have recently been characterised as “grey zone” activities, which are “designed to coerce countries in ways that seek to avoid military conflict.”¹⁴⁹ These activities include “using para-military forces, militarisation of disputed features, exploiting influence, interference operations and the coercive use of trade and economic levers.”¹⁵⁰

For example, in 2014 China placed an oil rig in waters claimed by Vietnam and surrounded it with fishing vessels, protected by coast guard and naval vessels, forcing Vietnam to either accept the situation or risk conflict.¹⁵¹ China also established a military presence in territory claimed by the Philippines, known as the Scarborough Shoal, and refused to withdraw despite a 2016 ruling by a special arbitral tribunal established under UNCLOS.¹⁵² In April 2020, a Chinese coast guard ship rammed and sunk a Vietnamese fishing boat near the Paracel islands.¹⁵³ China has also engaged in acts of military intimidation by intercepting US aircraft and naval vessels, sometimes in ways that risked collisions.¹⁵⁴

Another form of grey zone activity carried out by China has been the construction of artificial islands. By creating structures on top of rock formations that were otherwise partially or wholly submerged, China has effectively built over 3200 acres worth of new “islands”.¹⁵⁵ China has used these artificial islands to bolster its legal claims, asserting the sovereign rights that UNCLOS allows to be extended from *land*. China has also militarised these artificial islands, making it difficult for other states to observe or interfere with them without risking conflict. This form of grey zone activity is implicitly highlighted as a security challenge in Australia's 2020 *Defence Strategic Update's* reference to “militarisation of disputed features”.¹⁵⁶

Moreover, some of China's grey zone activity carried out further abroad is nonetheless closely related to the South China Sea, by trying to promote China's position on the issues. This includes some of the sorts of foreign interference and disinformation operations mentioned in the COVID-19 case study. For example, shortly after the 2016 special arbitral tribunal ruling, Chinese state media made false claims about leaders of neighbouring Asian countries expressing support for Beijing's position, with the result that the leaders had to publicly refute the claims.¹⁵⁷ These campaigns have also involved social media. For example, on 22 September 2020 Facebook announced that it had dismantled a campaign of “coordinated inauthentic behaviour” that was focused, in part, on “Beijing's interests in the South China Sea”.¹⁵⁸ A social media analysis firm described this as a disinformation campaign originating from China.¹⁵⁹ As another example, one of Australia's first controversies over foreign interference involved a Federal Member of Parliament resigning for having expressed support for

¹⁴⁸ Chubb, “PRC Assertiveness in the South China Sea.”

¹⁴⁹ “2020 Defence Strategic Update,” 12.

¹⁵⁰ “2020 Defence Strategic Update,” 12.

¹⁵¹ Brown, *Quarterly Essay 62 Firing Line*, 27.

¹⁵² “China Says Scarborough Shoal Situation ‘Has Not Changed.’”

¹⁵³ Joscelyn, “Why China Sunk a Vietnamese Fishing Boat During the COVID-19 Pandemic.”

¹⁵⁴ Medcalf, *Contest for the Indo-Pacific*, 89–90; Henry, “The 2016 Defence White Paper's Assessment of Australia's Strategic Environment,” 32.

¹⁵⁵ McNamara, “The Environmental Collateral Damage of the South China Sea Conflict.”

¹⁵⁶ “2020 Defence Strategic Update,” 12.

¹⁵⁷ ANI, “China Begins Disinformation Campaign Post-South China Sea Verdict.”

¹⁵⁸ “Removing Coordinated Inauthentic Behavior.”

¹⁵⁹ Winger, “China's Disinformation Campaign in the Philippines.”

China's position on the South China Sea, at odds with his party's policy, while receiving money from an individual who has since been banned from Australia on national security grounds.¹⁶⁰

Potential planetary health impacts of China's grey zone activities in the South China Sea

Some of these grey zone activities, particularly the construction of artificial islands, have had harmful impacts on planetary health due to the damage caused to the marine environment. The dredging required to construct artificial islands "breaks up coral reefs, disturbs ecosystems by changing wave patterns, and disrupts the migration corridor of many species".¹⁶¹ Artificial islands also allow for expanded fishing, yet fish stocks in the South China Sea are estimated to have declined by 70-95% since the 1950s, a problem exacerbated both by expanded fishing and the harm caused to fish larvae by the dredging process.¹⁶² The environmental damage harms the South China Sea's biodiversity, further undermining planetary health.¹⁶³

A broader challenge, with more indirect but nonetheless important potential consequences for planetary health, is the *normative contestation* inherent in China's grey zone activities over the South China Sea. While China is often accused of challenging the current "rules-based order", some authors have argued that China is proposing an alternative vision of maritime order, based on what has been described as "maritime territorialisation".¹⁶⁴ This alternative vision blurs the distinction between "sovereignty" (applying to land) and more limited "sovereign rights" (applying to water), which has been central to current understandings of UNCLOS. Unlike sovereignty, the notion of maritime sovereign rights includes various explicit responsibilities, such as responsibilities to protect the marine environment.¹⁶⁵ Some scholars have argued China's activities in the area suggest that "Beijing considers the South China Sea as subject to the domestic jurisdiction of China".¹⁶⁶

If China's approach indeed demonstrates (though without explicitly stating) a claim of sovereignty over the South China Sea, rather than simply a claim of sovereign rights, then China may not perceive itself to be bound to environmental obligations under UNCLOS.¹⁶⁷ If this approach of "maritime territorialisation" were to be widely adopted by other countries, planetary health would be further undermined.

Potential planetary health impacts of responses to China's grey zone activities in the South China Sea

This shows that China's grey zone activities in the South China Sea pose not only a security challenge but a challenge to planetary health. However, there is also the risk that security measures taken to respond to China's activities could themselves threaten planetary health.

¹⁶⁰ Remeikis, "Sam Dastyari Quits as Labor Senator over China Connections"; Knaus, "'Give Back My Money'"; Doherty, "Chinese Billionaire Huang Xiangmo Ordered to Declare Worldwide Assets by Australian Court."

¹⁶¹ McNamara, "The Environmental Collateral Damage of the South China Sea Conflict."

¹⁶² McNamara.

¹⁶³ Houdre, "Environmental Ramifications of the South China Sea Conflict."

¹⁶⁴ Strating, "Maritime Territorialization, UNCLOS and the Timor Sea Dispute"; Strating, "Norm Contestation, Statecraft and the South China Sea," 6.

¹⁶⁵ In the 2016 arbitral tribunal ruling on the Scarborough Shoal dispute between China and the Philippines, the tribunal was heavily critical of China for failing to uphold its environmental responsibilities. Specifically, the tribunal examined three environmental obligations: "the obligation of due diligence; the obligation to conduct an environmental impact assessment; and the obligation to cooperate." Tanaka, "The South China Sea Arbitration," 90; Bergin, "A Looming Environmental Disaster in the South China Sea."

¹⁶⁶ Strating, "Norm Contestation, Statecraft and the South China Sea," 5.

¹⁶⁷ Goldrick, "Chinese Military Strategic Perspective And Its Military Aims in The South China Sea."

For examples, other claimant states have also been causing environmental harm, including through constructing artificial islands (four of the five other states have engaged in this activity), in part to protect their claims of sovereignty against China's. Therefore, these states may have caused environmental harm in the process of protecting their own perceived security interests. While China has been the behind the overwhelming majority of the island-construction and has pursued it in a particularly damaging way, framing China as the central problem would not address marine damage caused by other claimant states.¹⁶⁸

Another problem is that further militarisation of the South China Sea, in response to China's militarisation of disputed features, risks further damaging the marine environment. For example, submarine sonars have been found to injure and even kill dolphins, whales and other marine life hundreds of kilometres away.¹⁶⁹ The competing claims made in the South China Sea risk being treated, by the countries involved, as more important than the marine environment itself. Moreover, any heightening of tensions between the United States and China risks undermining the international cooperation needed to address a wide array of planetary health problems, including climate change.

In short, while China's grey zone activities in the South China Sea pose both a security challenge and a planetary health challenge, it does not follow that what's required is a security-first approach framing China's activities as the central problem. Instead, there is a need to identify ways to advance security needs that are consistent with planetary health, which could be examined in future research.

¹⁶⁸ Houdre, "Environmental Ramifications of the South China Sea Conflict." However, other activities unrelated to China's grey zone activities also harm the marine environment, including commercial shipping by all states whose shipping lines pass through the region.

¹⁶⁹ "Does Military Sonar Kill Marine Wildlife?"

Case study three: Great power competition and Antarctica

This case study examines the prospect of great power tensions in the Antarctic region and its relevance to planetary health. It first outlines the development of the Antarctic Treaty System, a governance arrangement that prioritises scientific research and environmental protection. The case study then discusses how recent activities in Antarctica by Russia and China have been perceived as posing the threat of great power competition over the continent, while highlighting the contentious and sometimes speculative nature of debates occurring within the literature over these activities. It then discusses the potential challenges these activities pose to planetary health, before discussing the ways that responses to these activities could also challenge planetary health. The case study then concludes by identifying avenues for further research.

The Antarctic Treaty System

Antarctica was once described as “the last continent”, with no human presence until its discovery by explorers in 1820.¹⁷⁰ Despite being largely inhospitable to humans, the continent would not be free from geopolitical competition. Instead, various countries sought to stake claims to Antarctic territory. During the first half of the 20th century, Britain claimed 42% of Antarctica, while Argentina, Chile, France and Norway also made territorial claims. In 1939 German planes dropped cast-iron swastikas on to the ice to signal that the Nazi regime was now a new contender in the continent.¹⁷¹

After the Second World War, both the United States and the Soviet Union also developed a strong interest in Antarctica, raising the prospect that the continent could become a site of Cold War confrontation. However, by the late 1950s the contending parties had worked together to avoid this outcome. As part of the International Geophysical Year, an international scientific project from 1 July 1957 to 31 December 1958, twelve nations chose to cooperate on research projects in Antarctica, including the United States and the Soviet Union. This formed the basis of an unprecedented effort to keep the entire continent free from militarisation, leading to the Antarctic Treaty signed in Washington DC on 1 December 1959.¹⁷²

The Antarctic Treaty came into force in 1961 and helped to defuse territorial contestation between the Treaty’s 12 signatory nations. It established a consensus-based governance arrangement called the Antarctic Treaty System, which banned military activity and weapons testing, facilitated scientific cooperation, and called for information-sharing and the mutual inspections of bases.¹⁷³ The Treaty neither recognised, nor denied, any territorial claims. Instead, it halted all discussions of sovereignty in order to reduce tensions between claimant states. This achievement required “courage and goodwill – and some planetary consciousness – from all parties.”¹⁷⁴ It was “the first disarmament treaty of the Cold War” and it later helped to inspire approaches to the governance of the oceans and outer space.¹⁷⁵

¹⁷⁰ “The Last Continent.”

¹⁷¹ Griffiths, “A Miracle of Politics and Science.”

¹⁷² Antonello, “Another Ferocious Summer”; “Antarctic Treaty.”

¹⁷³ Griffiths, “A Miracle of Politics and Science.”

¹⁷⁴ Griffiths.

¹⁷⁵ Griffiths. The 1967 Outer Space Treaty established that no state could claim sovereignty over outer space or celestial bodies such as the moon. The United Nations Convention on the Law of the Sea was described in the previous case study.

it also ensured that other states could not themselves claim the territory. The most important motivation behind Australia's role was security, as the Treaty protected Australian security interests by preventing Antarctica's militarisation.

The Antarctic Treaty was a remarkable international achievement that benefited planetary health. By facilitating scientific cooperation, the Treaty enabled research that expanded human knowledge of climate change. Ice core drilling in the 1970s and 1980s helped to prove "the link between carbon dioxide levels and global temperatures."¹⁷⁹ The Treaty also helped to protect the continent from resource exploitation, though this was not its original intention.

Throughout the 1960s, 1970s and 1980s, many countries who had joined the Antarctic Treaty System conducted exploration for oil and gas drilling. In 1988 the parties signed a convention to regulate, but nonetheless allow, mining and drilling activities in Antarctica. In response to the damage this could cause the Antarctic eco-system, environmental movements campaigned for an outright ban on resource exploitation. Greenpeace established Antarctica's first non-governmental base to draw attention to the cause.¹⁸⁰

The campaign gained traction in Australia, and in May 1989 Prime Minister Bob Hawke announced that he would seek for the entire continent to essentially be treated as a nature reserve. Australia's approach faced strong opposition from the United States and Britain, but gradually won the support of France, followed by Italy and Belgium. The campaign was strengthened by highly-publicised oil spills, the *Exxon Valdez* in the Arctic and the *Bahía Paraíso* in the Southern Ocean, which draw attention to harm that poor management of resource extraction could inflict on the planet.¹⁸¹ By 4 October 1991 the parties signed the Protocol on Environmental Protection to the Antarctic Treaty, commonly referred to as the Madrid Protocol, which banned mining and drilling for resources, and also entrenched a range of other environmental protection measures.¹⁸²

The Antarctic Treaty System has largely proven stable. It now has 54 parties, 29 with decision making power, who cooperate to manage human activity on the continent.¹⁸³ The Treaty has served Australian security interests by keeping Antarctica demilitarised, and proved beneficial for planetary health by treating the continent as a nature reserve and as a site for scientific research. However, recent developments have raised security concerns in some of the academic and policy literature that Antarctica could now risk becoming a new arena for great power competition. These concerns centre on the recent activities, and possible intentions, of Russia and China.

¹⁷⁹ Antonello, "Another Ferocious Summer."

¹⁸⁰ Griffiths, *The Art of Time Travel*, 191.

¹⁸¹ Griffiths, "Breaking the Silence."

¹⁸² Griffiths.

¹⁸³ Antonello, "Another Ferocious Summer."



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Security debates about recent Russian and Chinese activities in Antarctica

During 2020, the Australian, British and United States governments either reduced, or announced reductions to, their research activities in Antarctica due to the COVID-19 pandemic.¹⁸⁵ At the same time, Russia and China increased their physical presence and stated interest in Antarctica, continuing a trend that had developed over recent years. The literature examined for this case study contained extensive debate over how to understand this development.

Russia has long maintained a large scientific research presence in Antarctica, given that the Soviet Union was one of the original signatories to the Antarctic Treaty, and currently maintains 12 research stations on the continent.¹⁸⁶ The literature highlights that Russia's recent activities suggest intentions that go beyond civilian scientific research. Russia has announced its intention to establish a ground-based station for a global satellite navigation system, which has been described as “dual-use”, as it would have both civilian and military applications.¹⁸⁷

Alongside this, both the Russian government and non-state actors aligned with the government have made statements asserting greater interest in Antarctica. In December 2019, a Russian naval ship arrived in Antarctica both to carry out scientific research on the Earth’s magnetic field and to celebrate

¹⁸⁴ Landsat Image Mosaic of Antarctica team, *English*. (public domain)

¹⁸⁵ Feiger and Wilson, “The Countries Taking Advantage of Antarctica During the Pandemic.”

¹⁸⁶ Hodgson-Johnston, “Collaborating with China in Antarctica.”

¹⁸⁷ Sukhankin, “Is Russia Preparing to Challenge the Status Quo in Antarctica?”

the 200th anniversary of what was claimed to be Russia's discovery of the frozen continent.¹⁸⁸ On 16 November 2019 members of the Russian motorcycle gang Night Wolves, strongly aligned with the Putin government, unrolled a 1400 square-metre Russian flag inside Antarctica.¹⁸⁹ In 2020 the Russian government announced that it would send a nuclear-powered cargo ship to Antarctica, which would be the first known visit by a nuclear vessel.¹⁹⁰ The literature contains debate over whether some of these activities, such as the potential military applications of the satellite navigation system or the suggested claim of sovereignty implicit in the flag stunt, foreshadow assertive actions inconsistent with the Treaty's emphasis on cooperation and demilitarisation.

China is a more recent participant in the Antarctic Treaty System, only becoming a consultative party in 1985.¹⁹¹ It has since established four permanent research stations, as well as a range of other facilities, and is currently building its fifth station.¹⁹² These stations are used to conduct scientific research, often in cooperation with Australia and other parties to the Antarctic Treaty System. However, some of the literature argues that China's activities also raise security concerns. At least three arguments have been put forward to support this.

One argument is that China's increasing physical presence foreshadows potential territorial claims. It is further argued that this is of particular concern because some of these stations are based within the 42% of the continent claimed by Australia, and that Australia's claim could therefore be challenged.¹⁹³ However, some of the literature contends that this argument is misplaced, stating that Australia itself has six stations in Antarctica and that Australia derives scientific benefits from China's research stations.¹⁹⁴ Several specialists on the topic contend that concerns about China's activities occurring within the 42% of the continent claims by Australia are particularly misplaced, given that the Antarctic Treaty System is not based on legitimising claims of sovereignty and that consequently "Australia can't apply its laws to other nationalities in the AAT [Australian Antarctic Territory] or deny access to other states for legitimate scientific activities."¹⁹⁵ However, other parts of the literature argue that, given China's actions in the South China Sea (as discussed in the previous case study), the possibility that physical constructions will precede assertive claims of sovereignty should be taken seriously.¹⁹⁶

A second argument is that China's research stations may be being used for military purposes, inconsistent with the Antarctic Treaty.¹⁹⁷ However, the information on this is limited. While the Treaty allows for parties to conduct inspections of bases to ensure they are not being used for alternative purpose, such inspections rarely occur.¹⁹⁸ A 2018 report Parliamentary Joint Standing Committee on the National Capital and External Territories stated that Australia had not sufficiently invested in the capabilities necessary to carry out inspections.¹⁹⁹ Moreover, there remains debate over what precisely

¹⁸⁸ Feiger and Wilson, "The Countries Taking Advantage of Antarctica During the Pandemic." There is no historical consensus on whether Russia or Britain first discovered Antarctica. Russia's claim is plausible but disputed.

¹⁸⁹ Sukhankin, "Is Russia Preparing to Challenge the Status Quo in Antarctica?"

¹⁹⁰ Antonello, "Another Ferocious Summer."

¹⁹¹ Bergin and Press, "Eyes Wide Open," 9.

¹⁹² Bergin and Press, 9.

¹⁹³ Hamilton, "Polar Progress."

¹⁹⁴ Hodgson-Johnston, "Collaborating with China in Antarctica."

¹⁹⁵ Young, "What's China up to in Antarctica?"

¹⁹⁶ Gothe-Snape, "China Is Building Antarctic Bases inside Australia's Claim. We Don't Know Why."

¹⁹⁷ Brady, "China's Expanding Interests in Antarctica," 13–16.

¹⁹⁸ At least two of China's research stations have never been inspected. Gothe-Snape, "China Is Building Antarctic Bases inside Australia's Claim. We Don't Know Why."

¹⁹⁹ "Maintaining Australia's National Interests in Antarctica: Inquiry into Australia's Antarctic Territory."

constitutes military activities under the Antarctic Treaty System.²⁰⁰ For example, various forms of “dual-use” activity, such as using military aircraft to transport scientists, are widely accepted.²⁰¹

A third argument is that China has at times promoted legal interpretations within the Antarctic Treaty System at odds with the positions of almost all other parties. This raises the prospect of the sort of *normative contestation* seen in the South China Sea. The Australian National University’s Professor Don Rothwell has stated that “there’s always that concern that given China’s position on some areas of international law, is China perhaps preparing itself to make some radically alternative arguments into the future which would not certainly be in Australia’s interests?”²⁰²

Overall, the literature examined for this case study tends not to suggest that either China or Russia’s activities in Antarctica currently pose a security threat in themselves.²⁰³ Indeed, Australia cooperates with, and scientifically benefits from, many of these activities. Nor does the literature generally argue that their activities currently violate the Antarctic Treaty, it instead tends to argue that more information is needed.²⁰⁴ However, the literature does demonstrate substantial concern over the security implications of Russia’s and China’s activities and what they may portend for the future. Some of the literature contends that these developments could be a prelude to potential grey zone activities that challenge Australian security, while other literature contends that these concerns are unfounded. For example, while it is common ground that the accusations “that China and others are contravening the treaty for grand strategic purposes... [are] hard to prove”²⁰⁵, for some participants in the debate this is treated as evidence that security concerns are exaggerated, while for other participants this ambiguity is typical of the clandestine nature of grey zone activity.

The security debates tend to have a speculative character as they are based on concerns about possible *hidden* military applications or *future* intentions. The scholar Mark Harrison summarises the debate by stating that there “is broad optimism within the Antarctic science community about the aspirations of the nations involved, particularly China, that contrasts with scepticism from the national-security and defence establishment – an indication of different institutionalised ideologies.”²⁰⁶ However, while the potential security impacts of Russia and China’s activities and intentions remain debated, the potential planetary health impacts can be more readily inferred from explicit statements by their governments on mineral exploitation and fisheries.

Potential planetary health impacts of Russian and Chinese activities in Antarctica

While debate continues about whether Russia and China’s increased presence and assertive stances in Antarctica should be seen as threatening in a security sense, the literature highlights that their activities pose a challenge to planetary health in two key ways. First, by opposing efforts at marine conservation in the Southern Ocean, and second, by raising the prospect of mineral resource

²⁰⁰ Buchanan, “Antarctica.”

²⁰¹ Bergin and Press, “Eyes Wide Open,” 17.

²⁰² Gothe-Snape, “China Is Building Antarctic Bases inside Australia’s Claim. We Don’t Know Why.”

²⁰³ Young, “What’s China up to in Antarctica?”

²⁰⁴ Young.

²⁰⁵ Young.

²⁰⁶ Harrison, “Antarctica and the China Test.”

extraction within Antarctica. In both ways, the assertive positions taken by these great powers could undermine elements of the Antarctic Treaty System that have benefited planetary health for decades.

For example, at recent meetings of the Convention for the Conservation of Antarctic Marine Living Resources (a sub-component of the Antarctic Treaty System), both China and Russia opposed Australian proposals to create marine sanctuaries off Antarctica's east coast.²⁰⁷ China has increased its krill-fishing in the Southern Ocean, and "pressed for reduced environmental safeguards".²⁰⁸ Similarly, Russia has also been "obstructing action to conserve marine systems and fisheries in the Southern Ocean."²⁰⁹

A recent dispute between Russia and New Zealand provides an example of how Russia's newly assertive approach in relation to Antarctica overlaps with its objections to elements of the marine protection system. In 2020 a New Zealand surveillance aircraft spotted a Russian vessel (the FV Palmer) illegally fishing "in a closed marine protected area off Antarctica".²¹⁰ New Zealand alerted Russia to this through a meeting of Commission for the Conservation of Antarctic Marine Living Resources, but Russia responded by accusing New Zealand of fabricating the data as a ploy to smear Russia.²¹¹

There is also the prospect of Russia and China pushing for changes to allow mineral exploitation in Antarctica. Due to the Madrid Protocol's mining ban, exploration for oil and gas resources has usually been carried out under the guise of scientific research, but recently the Russian government has been explicitly expressing an interest in mining in Antarctica. In February 2020, the Russian government geological survey agency announced that it had found "about seventy billion tons" of "potential hydrocarbon resources" in one of the Antarctic seas, the Riiser-Larsen Sea.²¹² Such discoveries may place the Treaty under strain, further raising the stakes for territorial claims on the continent. Russia and China are not the only countries to express interest in mining for fossil fuels in Antarctica, but when these expressed interests are combined with the assertive actions as outlined above, they pose a particular challenge to planetary health.

The purpose of these case studies is to identify ways that security threats, and actions taken in the name of countering those threats, can impact planetary health. Russia and China's activities in Antarctica can be best as understood as security concerns rather than outright threats, as there remains active debate about whether these activities should be seen as threatening. Nonetheless, these activities pose a challenge to planetary health, as they risk harming the Antarctic eco-system.

Potential planetary health impacts of responses to Russian and Chinese activities in Antarctica

In light of these activities by Russia and China, some participants in the debate suggest that Australia should itself play a more assertive role. However, other participants warn that such an approach could

²⁰⁷ Harrison.

²⁰⁸ Young, "What's China up to in Antarctica?"

²⁰⁹ Antonello, "Another Ferocious Summer."

²¹⁰ Hooper, "China And Russia Hate Indo-Pacific's New Collaborative Surveillance Webs."

²¹¹ Harvie, "Russia and NZ in 'knock out Brawl' over Fishing Vessel in Protected Antarctic Waters."

²¹² Antonello, "Another Ferocious Summer."

itself risk harming the natural environment in Antarctica, as it would involve increasing Australia's human and physical activity in a fragile continent.

For example, in 2019 the Australian government announced a project to build a paved runway in its claimed Antarctic territory, to support the development of its Antarctic bases.²¹³ When completed, the project would give Australia the largest physical "footprint" in Antarctica, exceeding all other countries including the United States.²¹⁴ In the literature, this construction is often perceived as part of Australia's response to the prospect of increased competition, asserting that "Australia is keen to counter China's growing presence on the frozen southern continent."²¹⁵ One environmental scientist asserted that it "is about firming up Australia's presence and our claim".²¹⁶ If the runway's construction is partly motivated by a need to respond to competition in Antarctica, it can be understood at least in part as a security measure.

However, the literature highlights concerns that this project, which would be the first concrete runway in Antarctica, could cause extensive environmental damage.²¹⁷ Some participants in the debate have argued that the project would "add 40% to the existing infrastructure on the continent", resulting in "pollution, dust, noise and carbon emission" as well as potential damage to wildlife.²¹⁸ It is unclear whether these critiques are well-founded. The Australian Antarctic Division has stated that the potential environmental impact would be carefully evaluated and submitted to other Antarctic Treaty parties for scrutiny.²¹⁹

Regardless of the specifics, the broad dilemma is clear. Antarctica has a fragile eco-system, which is what prompted the adoption of the Madrid Protocol in 1991. For Australia, and its partners and allies, to increase their physical presence in Antarctica to offset Russia and China's presence could itself pose risks to Antarctica's natural environment, and would need to be approached carefully. Some have warned that this could "lead to a destructive construction race among territorial rivals".²²⁰ Such competition could undermine scientific cooperation, setting back research efforts that have been so crucial for planetary health, including research into climate change.²²¹

In short, the debates over the potential impact of Australian activities in Antarctica tend to have a highly speculative character, similar to the debates over Russia and China's activities. Nonetheless, just as Russian and Chinese activities in Antarctica can be understood as a security concern that poses a challenge to planetary health, a poorly-managed response could similarly challenge planetary health, particularly if these developments in Antarctica escalated from subtle manoeuvrings to outright competition. This points to the need for further research.

²¹³ Jabour and Brooks, "Australia Wants to Build a Huge Concrete Runway in Antarctica. Here's Why That's a Bad Idea."

²¹⁴ Jabour and Brooks.

²¹⁵ Watts, "A Real Bad Precedent: Australia Criticised for Antarctica Airport Plan."

²¹⁶ Watts.

²¹⁷ Jabour and Brooks, "Australia Wants to Build a Huge Concrete Runway in Antarctica. Here's Why That's a Bad Idea."

²¹⁸ Watts, "A Real Bad Precedent: Australia Criticised for Antarctica Airport Plan."

²¹⁹ Watts.

²²⁰ Watts.

²²¹ Hodgson-Johnston, "Collaborating with China in Antarctica"; Young, "Eyes on the Prize."

Avenues for future research

The three case studies provide wide scope for further research. There are multiple other ways that the issues raised by each case study could be examined in more depth. The project team, in consultation with DST, agreed on several specific avenues for future research based on common themes across the three case studies that resonated with key research aims for both ASSP and DST.

These common themes included *grey zone activity*, as this was the form that the security threats in all three case studies took. The case studies were also all relevant to the *2020 Defence Strategic Update's* emphasis on *shaping* as one of three core concerns for Defence (along with deterring and responding).²²² This refers to the need to shape Australia's strategic environment, such as through cooperative partnerships across the Indo-Pacific, along with the reality that potential adversaries will also be attempting to shape the same strategic environment.²²³ Similarly, *foreign-orchestrated disinformation* was relevant not just for the first case study, but also for the second case study (as there have been disinformation campaigns in support of China's claims in the South China Sea) and potentially the third case study (if tensions over Antarctica were to escalate). As a result, international competition for *influence*, along with issues of *trust* and *resilience*, were relevant across the case studies.

Based on these common themes, the project team developed the following avenues for future research:

Societal resilience to disinformation in the Australian context

One imperative arising from the first case study was the need for meaningful measures of societal resilience to disinformation, and for greater understanding of what could help build such resilience. This is consistent with broader research efforts on resilience. For example, the Australian Army's *3rd Quarterly Strategic Update 2020* emphasised the need for research on the "drivers of resilience", and the Torrens Resilience Institute has called for the "Development of a Resilience Research Science and Technology Capability for Information and Influence".²²⁴

One way to conduct such research, but with a specific focus on disinformation in the Australian context, is to build on the approach of Edda Humprecht *et al.* who, as discussed in the first case study, examined levels of resilience to online disinformation in 18 Western democracies.²²⁵ Australia was not among these 18 countries, but future research could adopt this approach for Australia. This could identify whether these measures of resilience help explain the apparently limited impact of foreign-orchestrated disinformation on Australia's response to the COVID-19 pandemic or other planetary health crises.

This research would also have value beyond planetary health problems. In particular, it could focus on potential Australian vulnerabilities to disinformation over issues that have not been prominently identified yet.

²²² "2020 Defence Strategic Update."

²²³ "2020 Defence Strategic Update," 25–27.

²²⁴ "Strategic Assessment (Quarter 3, 2020)," 3; Arbon, "Development of a Resilience Research Science and Technology Capability for Information and Influence."

²²⁵ Humprecht, Esser, and Van Aelst, "Resilience to Online Disinformation."

Normative contestation and environmental obligations

The second case study noted that, as part of the competition for *influence* over the South China Sea, China had been engaged in normative contestation over interpretations of the United Nations Convention of the Law of the Sea (UNCLOS) and over whether China could exert outright sovereignty, rather than just sovereign rights, over particular maritime areas.²²⁶ It was noted that this has planetary health implications, as claims of sovereignty do not carry the environmental obligations that sovereign rights carry under UNCLOS. There is scope for further research on the planetary health implications of such normative contestation over the maritime environment, and how this could play out in regions other than the South China Sea.

The potential security benefits of environmental leadership

The third case study highlighted that Australia may have difficulty challenging Russian and Chinese activities in the Antarctic region that threaten planetary health (such as opposition to marine sanctuaries and potential future interest in mining) if Australia's own activities in the region were to be credibly accused of causing environmental harm. This raises the prospect that if Australia showed greater environmental leadership, it could allow for greater *influence* (such as within the Antarctic Treaty System) and therefore have indirect security benefits. However, this prospect is hypothetical and requires further research.

For example, does greater environmental leadership actually have indirect security benefits, and in what ways? Alternatively, in what ways might greater environmental leadership actually involve security trade-offs, requiring Australia to not undertake measures it might otherwise regard as necessary for security? This research would not need to be limited to the Antarctic context of the third case study. It would also be relevant to the second case study, given the environmental harm caused by some of China's grey zone activities along with the possibility that states that draw attention to such activities might be responsible for various types of environmental harm themselves.

This research would also be relevant beyond the contexts examined in these three case studies. For example, Pacific Island states have strong concerns over environmental harms such as excessive fishing and planetary health crises such as climate change. This research could identify the potential for addressing shared planetary health concerns as a non-coercive and non-deceptive means of building influence and achieving shared goals, and whether this would have indirect security benefits in relation to adversaries willing to use coercive and deceptive means of building influence.

The relationship between terrorism, disinformation and planetary health

This project briefly touched on the relationship between terrorism, a core research concern for ASSP, and the various issues discussed throughout this report. Future research could examine the relationship between terrorism and disinformation, such as in what ways disinformation might help to inspire terrorism.²²⁷

Future research could also examine the impact that terrorist attacks have on responses to planetary health. For example, the Introduction to this report highlighted connections between terrorist attacks in Europe throughout 2014 and 2015 and the rise of populist movements that, amongst other policy

²²⁶ Strating, "Maritime Territorialization, UNCLOS and the Timor Sea Dispute"; Strating, "Norm Contestation, Statecraft and the South China Sea," 6.

²²⁷ For an example of such research, see: Piazza, "Fake News."

positions, opposed various cooperative efforts to tackle planetary health. Future research could examine these connections thoroughly.

Responding to the impact of security threats on planetary health without securitising planetary health

Several of the articles examined in the formal literature review warned of the dangers of securitising planetary health problems, arguing that this could result in a wide range of harms (such as health-based discrimination) and prove ineffective. This project has sought to avoid this risk, by placing planetary health first and focusing on the dangers that security threats pose to planetary health, rather than treating planetary health issues as security threats. However, any engagement between a security focus and a planetary health focus could nonetheless risk resulting in some of the securitising approaches that some of the literature warns against. Research could be conducted on how to minimise this risk, and potential issues associated with securitisation should be kept in mind for all of the above avenues for future research.

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