

Destroying the World to Save It

*Why Security Studies Needs to Engage with
the Planetary Health Agenda*

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Executive summary

This report establishes a basis for greater engagement between the field of security studies and the planetary health research agenda. It demonstrates how the planetary health research agenda presents a valuable new approach for understanding emerging security issues, including grey zone activities highlighted in the *2020 Defence Strategic Update*. Through the use of place-based case studies, this report identifies multiple intersections between security issues and planetary health issues relevant to Defence.

The planetary health agenda is an interdisciplinary research effort, launched in 2015, concerned with protecting the health of human societies and the natural systems upon which they depend. Security studies is a field within the social sciences concerned with advancing understandings of security. Security issues impact planetary health in a wide range of ways, as examined in this report, but security studies rarely engages directly with the planetary health research agenda.

To understand more about the relationship between these two fields, the project had four objectives:

1. To define barriers preventing security studies from incorporating a planetary health perspective into research.
2. To identify the shortcomings arising from security studies when they fail to incorporate a planetary health perspective.
3. To document how both security threats and security measures impact planetary health.
4. To identify additional research areas relevant to security studies in alignment with a planetary health focus.

To achieve these objectives, this project consisted of multiple components: a preliminary literature review, a formal review of international academic literature, and three case studies relevant to Defence.

The case studies examined were:

1. Foreign-orchestrated disinformation and its potential impact on Victoria's response to the COVID-19 pandemic.
2. China's grey zone activities in the South China Sea and its potential impact on the protection of the marine environment.
3. Russia and China's widely-debated activities in Antarctica and their potential impact on the protection of the Antarctic eco-system.

Key findings

- The field of security studies *does* address planetary health problems, although it does not use the language of “planetary health” nor reference to the planetary health research agenda.
- No evidence of explicit engagement with the planetary health research agenda in the surveyed security studies literature was identified, including no reference to “planetary health” in any of the ten leading security studies journals which were surveyed in the project’s formal review of international academic literature for the period 2015-2020, suggesting a lack of awareness of the agenda in the field.
- A diverse range of planetary health problems were addressed in the security studies literature. This included issues such as drought, food scarcity, disease (including malaria, Ebola, HIV/AIDS, and COVID-19), organ transplants, reproductive health, species extinction, poaching, defoliation, resource extraction, fishery depletion, whaling, water management, renewable energy, biodiversity, nuclear power, and climate change.
- Security studies scholars were commonly concerned with how *traditional inter/national security issues*, such as inter-state warfare, arms control, great power competition or terrorism, intersected with planetary health problems. Almost half (48%) of the 125 security studies journal articles identified as having addressed planetary health problems included an interest in such traditionalist conceptions of inter/national security. This suggested that traditional conceptions of security were not necessarily being displaced in favour of non-traditionalist conceptions of security, such as *human security* or *environmental security*, when issues of planetary health were engaged with.
- The research *typically focused on how a planetary health problem might impact a traditional inter/national security issue*, such as whether climate change increased the risk of civil war breaking out. The research was *much less concerned with how a traditional inter/national security issue might impact a planetary health issue*, such as how violent conflict could lead to environmental destruction or how actors engaged in violent conflict might use access to food or water as a weapon against civilian populations, although such research was present.
- When the remainder (52%) of the surveyed security studies articles relating to planetary health issues *did not actively engage with traditional inter/national security issues*, this was for a number of reasons. While some articles did establish non-traditional conceptions of security (health security, human security) as central concerns, other articles explicitly warned against the securitisation of planetary health problems and the responses to them.
- Research on planetary health problems was not equally distributed between the ten security studies journals that were examined, with the field’s core journals and other traditionalist security studies journals largely *not engaging* with these issues. Rather,

journals oriented towards the study of international relations, peace and security, and critical security studies journals were much more likely to include research on planetary health problems. Similarly, journals associated with policy-oriented think-tanks and research reports issued by think-tanks were significantly more likely to address planetary health issues.

- The project's case studies found that the planetary health research agenda presents a valuable new approach for understanding the dimensions of emerging security issues, including grey zone activities highlighted in the *2020 Defence Strategic Update*. By focusing on grey zone activities, the case studies identified several intersections between security issues and planetary health issues relevant to Defence.

Introduction

"We cannot hope for sustainable development without peace, stability, human rights and effective governance, based on the rule of law. Yet our world is increasingly divided. Some regions enjoy peace, security and prosperity, while others fall into seemingly endless cycles of conflict and violence. This is not inevitable and must be addressed."

*United Nations Sustainable Development Goal 16: Peace, justice and strong institutions*¹

On 30 November 2015, leaders and representatives from 159 countries met for the opening of the Paris Climate Summit. This international endeavour to address climate change, one of the greatest threats to planetary health, was intended to accomplish more than any earlier effort. French President François Hollande warned the attendees that the "hope of humanity" rested on their shoulders, and that they should not miss this chance for a binding agreement to make a meaningful impact on climate change.²

Yet a shadow hung over the summit. Just over a fortnight beforehand, on 13 November 2015, a large-scale terrorist attack had shaken Paris. In the name of a movement that called itself the "Islamic State", nine gunmen and bombers had attacked a music concert at the Bataclan Theatre, a football match at the Stade de France, and several cafes and restaurants, murdering 130 people in a brutal massacre.³ This was just one of Islamic State's many international terrorist attacks since 2014. The day beforehand, 12 November, they had carried out twin suicide bombings in Beirut murdering 37 people.⁴

World leaders expressed their determination to not let terrorism overshadow the threat of climate change, and to not let the attacks derail the Summit. German Chancellor Angela Merkel declared that "we are stronger than the terrorists" and urged attendees to "try and not disappoint".⁵ US President Barack Obama had earlier stressed that, "it's absolutely vital for every country, every leader, to send a signal that the viciousness of a handful of killers does not stop the world from doing vital business."⁶

Days later, the Summit ended with an unprecedented agreement to reduce carbon emissions as quickly as possible to "achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases" and keep global temperature rises below two degrees Celsius.⁷ However, this turned out to have represented a high point in global efforts to address planetary health changes. It later became clear that terrorism had, in part, challenged the international cooperation needed to tackle climate change.

The violent attacks instigated or inspired by Islamic State since 2014 had a destabilising impact on European and American politics, where domestic political movements advocating for shifts away from multilateralism in favour of isolationism and nationalism took root. In this strain of thinking, some political movements, such as the Trump election campaign in the United States and the Brexit

¹ "Goal 16."

² "Leaders Link Climate Change And Terrorism at Opening of Paris Climate Summit."

³ Brisard, "The Paris Attacks and the Evolving Islamic State Threat to France."

⁴ "Lebanon Holds Day of Mourning after Deadly Beirut Blasts."

⁵ "Leaders Link Climate Change And Terrorism at Opening of Paris Climate Summit."

⁶ Harvey, "Don't Let Paris Attacks Stop COP21 Climate Change Deal, Obama Urges."

⁷ Walsh et al., "Pathways for Balancing CO₂ Emissions and Sinks," 2.

referendum campaign in the United Kingdom, conflated the perpetrators of these attacks with the millions of refugees fleeing Syria's brutal civil war.⁸ Key figures from these movements portrayed terrorist attacks as the inevitable result of a sinister "globalism" that permitted uncontrolled migration flows. Russian disinformation efforts, which had escalated after the 2014 Ukraine crisis, promoted a similar narrative.⁹ US Presidential candidate Donald Trump regularly pointed to attacks in Europe to call for a "Muslim ban" on migrants to the United States, and saw his poll numbers spike as a result.¹⁰ The destabilisation prompted by Islamic State's large-scale terrorist attacks in Europe from 2014 onwards was one of many complicated factors that contributed to the success of the Brexit and Trump campaigns in 2016, which in turn helped to strengthen other populist and nativist movements.

After coming to power, the Trump Administration, which claimed that climate change was a "Chinese hoax", effectively withdrew from the Paris Agreement. Despite the high hopes of the Paris Climate Summit in November 2015, the new political atmosphere shaped by the rise of populist and nativist movements proved to undermine the global cooperation needed to address planetary health challenges such as climate change. This demonstrates how terrorism, an issue typically seen through a national security lens, had indirect implications for planetary health (as the health of human societies and the natural systems upon which they depend).

Moreover, terrorism is simply one of many security concerns that can undermine efforts to protect planetary health. For example, disinformation campaigns (whether from extremists, state actors, or others) can interfere with responses to planetary health crises such as bushfires, the COVID-19 pandemic, and climate change. Security threats to supply chains, such as disruptions to fuel shipments caused by military tensions in the Straits of Hormuz, or great powers competing to secure protective equipment or medical treatments, can similarly harm responses to planetary health crises. Military blockades can have devastating health outcomes, as is evident in the civil war in Yemen, and can exacerbate environmental problems. Efforts to secure maritime territorial claims, such as China's island-building campaign in the South China Sea, have been accused of causing extensive environmental harm.¹¹ Other maritime security concerns, such as illegal fishing, have also had devastating environmental impacts by threatening the survival of various fish species and the livelihoods of coastal communities who depend on them.

Of course, security is an inherently subjective and contested concept. Actions taken in the name of countering a nation-state's perceived security threats can sometimes cause greater harm, including harm to planetary health. For example, several scholars have warned that the prospect of great power jostling over Antarctica (as Russia, China and the United States perceive security threats in each other's activities in the continent) threatens to undermine cooperative efforts to protect the ice shelf.¹² Indeed nation-states often undertake military actions in the name of defending their national security, but war itself can threaten international security and undermine global cooperation. As United

⁸ Abbas, "Conflating the Muslim Refugee and the Terror Suspect"; Smith, "More than 80% of Trump Supporters See Refugees as Threat to US, Survey Shows."

⁹ Paul and Matthews, "The Russian 'Firehose of Falsehood' Propaganda Model: Why It Might Work and Options to Counter It."

¹⁰ "Terrorism in the Age of Trump."

¹¹ "One Result Of China's Buildup In South China Sea."

¹² Antonello, "Another Ferocious Summer."

Nations Sustainable Development Goal 16 implicitly recognises, peace is a prerequisite for protecting the planet.¹³

Therefore, issues of security can be inherently related to issues of planetary health. Yet, academic research on security concerns has tended not to engage with the planetary health research agenda. This project represents a step towards understanding why this is, and what can be done about it.

¹³ "Goal 16."

Research design and methods

The project consisted of three components: a preliminary literature review, a formal literature review, and three case studies.

Preliminary literature review

This was intended to *develop propositions* as to what some of the barriers preventing security studies from incorporating a planetary health perspective into research might be. It involved:

- Developing an initial understanding of how security studies engages with planetary health problems.
- Developing propositions to help address Objective One, barriers to engagement, to be assessed in the formal literature review.

For the preliminary literature review, the team examined foundational texts of the planetary health research agenda as well as key texts that provided overviews of the field of security studies, such as *The Evolution of International Security Studies* by Barry Buzan and Lene Hansen and the textbook *Contemporary Security Studies* edited by Alan Collins.¹⁴ The team also examined key journals, such as the field's two core traditional journals *International Security* and *Security Studies*, along with a range of relevant journal articles and grey literature, as well as drawing on the team's prior knowledge of the field.

By drawing on this material, the project team identified key features of the fields of security studies and planetary health, developing an initial understanding of how security studies had engaged with planetary health problems so far, and developed four propositions to help explain barriers to engagement. This material also helped the team to establish the parameters for the formal literature review, by identifying key journals and selecting search terms. This material also enabled the team to establish the parameters for the three case studies and, in consultation with Defence Science and Technology (DST), decide which cases to focus on.

Formal review of international academic literature

The formal literature review was intended to examine whether the four propositions developed in the preliminary literature review held up empirically. It also sought to identify alternative explanations if necessary, and to gain a clear sense of the research gaps or shortcomings.

The formal literature review was conducted through a systematic process, explained in detail in the chapter itself. Ten journals and 14 search terms, in addition to “planetary health”, were identified in the preliminary literature review. The ten journals were searched for the fourteen search terms, plus the term “planetary health” itself, using the academic databases the journals were affiliated with: TANDF, SAGEPUB, OXFORD ACADEMIC, and MIT PRESS. Filters were applied to limit the searches to articles published between 1 January 2015 and 18 October 2020 (the latter date being the date the searches were conducted) and, where possible, to exclude irrelevant formats such as book reviews.

¹⁴ Buzan and Hansen, *The Evolution of International Security Studies*; Collins, *Contemporary Security Studies*.

The details of the resulting 1283 articles were saved to the citation management software Zotero and then exported to Microsoft Excel.

The 1283 articles were whittled down through a format-based cull, title-based cull and abstract-based cull, resulting in 125 security studies articles that engaged with problems of planetary health. Four binary (yes or no) variables and three open-ended variables were then examined in relation to each article and the results were recorded in the Excel worksheet. These results were then drawn on to assess the four propositions developed in the preliminary literature review to help explain the limited engagement between security studies and the planetary health research agenda, and to provide further findings relevant to improving engagement between the two fields.

In doing so, the formal literature review addressed Objectives One and Two:

1. To define barriers preventing security studies from incorporating a planetary health perspective into research.
2. To identify the shortcomings arising from security studies when they fail to incorporate a planetary health perspective.

Case studies

The case studies drew on the journal articles identified in the formal literature review, as well as other academic literature which was not captured in the review but was relevant to the specific security threats (such as disinformation) or the specific planetary health problems (such as environmental protection). Searches were also conducted for Australia-focused grey literature, as this was not captured by the formal review of the academic literature. This included reports produced by think-tanks such as the Australian Strategic Policy Institute and Lowy Institute for International Policy, or academic research centres such as the Australian National University's Strategic and Defence Studies Centre. Non-traditional academic journals such as the *Australian Journal of Defence and Strategic Studies* and *Security Challenges* were also searched. Content from the grey literature repository *Analysis and Policy Observatory* (APO) and outlets such as *The Strategist*, *The Interpreter* and *The Conversation* were also used.

Drawing on this material, the project team examined the security threats in question and the range of ways in which these threats could impact planetary health. These included: foreign-orchestrated disinformation and its potential impact on Victoria's response to the COVID-19 pandemic, China's grey zone activities in the South China Sea and its potential impact on the protection of the marine environment, and Russia and China's widely-debated activities in Antarctica and their potential impact on the protection of the Antarctic eco-system. After using the literature to examine the cases in question, and to help identify ways that security threats and security measures could impact planetary health, the team invited DST for discussions on avenues for further research. In doing so, the three case studies addressed Objectives Three and Four:

3. To document how both security threats and security measures impact planetary health.
4. To identify additional research areas relevant to security studies in alignment with a planetary health focus.

Preliminary literature review

“[S]tudying the Earth is like studying a series of nested, intertwining spheres. There is the *lithosphere*, the rocky surface and interior of our planet; the *atmosphere*, the thin layer of gases that warms the surface and sustains life; the *magnetosphere*, the magnetic bubble that protects our world from harmful solar radiation; the *hydrosphere*, a thin surface shell of water mostly in the oceans but also in seas, lakes, rivers, glaciers and polar caps; and finally the *biosphere*, the collection of all living things on our planet. Each of these spheres has been critically important to the history of our planet, and they are all interrelated in complex ways that cannot easily be untangled. ... It is perhaps more important now than it ever has been in human history for us to understand our home as a complex, interdependent set of systems, and especially for us to understand the special role that our species plays in that set of systems.”

Jim Bell, *The Earth Book*¹⁵

This section details the first phase of the research project, which consists of a preliminary literature review to assess the relevance of security studies to the planetary health research agenda. This involved an examination of both fields to determine whether, and in what forms, there was overlap or engagement between these research spaces. This establishes the basis for the formal literature review and the three case studies, undertaken to address the project’s four objectives.

This preliminary literature review first discusses the fields of planetary health and security studies to conceptualise them in the context of the project’s aims. It briefly outlines the evolution of security studies, identifying developments relevant to the planetary health research agenda and developing four propositions to help explain why engagement between the two fields has been relatively limited. These four theoretical propositions are then assessed in the formal literature review below, to establish the extent to which they hold up empirically. By doing so, this preliminary literature review establishes the basis for the formal literature review to address the project’s first two objectives:

1. To define barriers preventing security studies from incorporating a planetary health perspective into research.
2. To identify the shortcomings arising from security studies when they fail to incorporate a planetary health perspective.

This section then establishes the parameters for conducting the formal literature, by selecting the journals to be searched, the relevant time period, the types of articles to be sought, and the search terms to be used. Lastly, this preliminary literature review proposes some key ways that security threats, and measures taken in the name of countering such threats, could impact planetary health. This discussion sets the parameters for the three case studies, which will provide a closer examination of the relationship between specific security issues and specific planetary health problems. This establishes the basis for the case studies to address the project’s final two objectives:

3. To document how both security threats and security measures impact planetary health.

¹⁵ Bell, *The Earth Book*, 8,12.

4. To identify additional research areas relevant to security studies in alignment with a planetary health focus.

Planetary health

Planetary health refers to the health of human societies and the natural systems upon which they depend.¹⁶ The concept was popularised in 2015 by the Rockefeller Foundation and *The Lancet* working in collaboration, to initiate a new academic research agenda and field of study. The Planetary Health Alliance, launched with the Rockefeller Foundation's support in 2016, defines it as "a field focused on characterising the human health impacts of human-caused disruptions of Earth's natural systems."¹⁷

The Planetary Health Alliance argues that a new research agenda is needed because humanity's impact on the natural environment poses escalating risks to public health. They point out that "climate change, ... declining biodiversity, shortages of arable land and freshwater, pollution, and changing biogeochemical flows" all have impacts on "our global food production system, the quality of the air we breathe and of the water we drink, our exposure to infectious diseases, and even the habitability of the places where we live."¹⁸ These increasing risks, they argue, create the urgent need for a forward-looking research agenda involving "massive collaboration across disciplinary and national boundaries to safeguard our health."¹⁹ A core concept for the planetary health research agenda is the Anthropocene, which refers to a new geological epoch in which "humanity has become a primary determinant of Earth's biophysical conditions".²⁰ A key focus of the planetary health research agenda is climate change, as one of the most pressing examples of how human activity has inflicted harm on the planet that in turn causes harm to humans.

The planetary health research agenda is ambitious, seeking to establish a new discipline within the health sciences as well as the natural and physical sciences. As the term encompasses a broad subject area, there are multiple definitions of planetary health. However, what the various definitions tend to share as the core premise is the inter-relatedness of the state of the natural environment and human health. Examples include: "the health of human civilisation and the state of the natural systems on which it depends", "the wellbeing of all depends upon the wellbeing of the planet", and "the human health impacts of human-caused disruptions of Earth's natural systems."²¹ It is for this reason that this project defines planetary health as *the health of human societies and the natural systems upon which they depend*.

Though planetary health is a broad concept, it can be understood as encompassing a range of narrower problems involving human health (such as diseases and malnutrition), the natural environment (such as forest clearance and biodiversity loss), or the relationship between the two. This is important because security studies' relevance to planetary health need not only consist of explicit

¹⁶ That is an adaptation of the Rockefeller Foundation's definition, "the health of human civilisation and the state of the natural systems on which it depends". As "civilisation" is a contested term that much of the literature avoids, the definition used in this project replaces it with "societies". See: "The Planetary Health Landscape From Concept to Action."

¹⁷ "Planetary Health."

¹⁸ "Planetary Health."

¹⁹ "Planetary Health."

²⁰ Whitmee et al., "Safeguarding Human Health in the Anthropocene Epoch," 1976.

²¹ "The Planetary Health Landscape From Concept to Action"; "Place-Based Planetary Health Research Funding Program"; "Planetary Health."

engagement with the broad *planetary health research agenda*, but also approaches that engage with more specific *planetary health problems*. This understanding guides the formal review of international academic literature and the three case studies, which examines the relevance of security studies, security threats, and security measures, to specific planetary health problems, rather than only addressing the concept of planetary health in its broadest and most holistic sense.

Security studies

The Applied Security Science Partnership (ASSP) engages with a wide range of *security sciences*, a broad term that encompasses aspects of various academic disciplines relevant to advancing understandings of security. *Security studies* is a narrower concept than security sciences, referring to a specific academic field that originated in the United States of America in the early years of the Cold War. Security studies fits primarily, although not exclusively, within the academic disciplines of international relations and political science. It therefore constitutes a social science, which differs significantly from the planetary health research agenda, which is otherwise located in the health sciences and the natural and physical sciences. This disciplinary disjuncture may itself constitute a significant hurdle for the advancement of a planetary health agenda within security studies (or within the security sciences more broadly).

The concept of *security* is central to security studies, and the field has engaged with many different interpretations of security over the course of its evolution. At its most basic, security refers to a condition defined by the relative absence of danger or threat. Beyond this premise there can be many different variations to security, depending on what is to be secured. For example, *national security* treats the security of the nation-state as the paramount concern.²² For *international security*, the security of the broader system of nation-states is the focal point.

In the early decades of the Cold War, the field of security studies was traditionally concerned with national security and international security, mainly in the context of violent conflict and the prospect of nuclear war. Security scholars concerned with international security sought to understand how to prevent or manage global conflict between states, while those concerned with national security sought to understand how specific states (namely the United States and its allies) could prevail if a conflict broke out.

From the 1970s onwards, the field underwent a transformation that leading security studies scholars Barry Buzan and Lene Hansen describe as a process of “widening and deepening”.²³ This transformation was partly the result of an increased reluctance within academia to be involved with national security policy in the wake of the Vietnam War, as a new generation entered this workforce, as well as the result of broader intellectual shifts within the discipline of international relations.

²² The concept of national security gained traction in English speaking countries in the build up to the Second World War. Scholars at Princeton and Yale promoted the term as a broader concept than defence, to convey how Nazi Germany’s rise could pose a momentous danger to America even though it did not appear to pose a direct military threat. After the Second World War, the term became institutionalised in US policymaking, as shown by the passing of the National Security Act in 1947 and the creation of the National Security Council. The term had already become institutionalised at the governmental level earlier in Australia. For example, the legislation passed in 1939 to enable Australia’s mobilisation for the Second World War was similarly called the National Security Act.

²³ Buzan and Hansen, *The Evolution of International Security Studies*, 187.

Dominant approaches such as realism and liberalism came under challenge from growing schools of thought such as constructivism, Marxism, feminism, postcolonialism and critical theory.²⁴

One result of this transformation was a proliferation of new conceptions of security within the field of security studies. In addition to traditional concepts such as *national security* and *international security*, the field saw the development of the concept of *human security*, which treated the security of individual humans as the key object of concern. Other ways of understanding security were introduced into the field, including *environmental security*, *economic security*, *societal security*, *regime security*, *health security* and various others.²⁵ Many scholars also focused on the idea of *securitisation*, seeking to understand how particular issues became framed as security threats. These non-traditional concepts of security did not ultimately supersede traditional concepts of security, particularly the field's focus on *international security*, but they have resulted in security studies becoming a broad and diverse field.²⁶

Over recent decades the field of security studies has grown not only within academia, but in the broader policy realm. Due to the importance national governments place on security issues, security studies routinely draws from and contributes to professional communities outside of academia. Consequently, an extensive amount of “grey literature” such as reports produced by think-tanks, non-government organisations, consultancies and governments, can be considered to be part of the field of security studies.²⁷ This has further contributed to the growth, and increased diversity, of security studies.

This diversity within the field of security studies, demonstrated by the evolving understandings of security, is important to this project for multiple reasons. First, it shows that the formal literature review needs to encompass a wide range of journals to give a fair representation of the field. If the formal literature review was to limit itself to a small number of journals, such as the two traditionally regarded as the field's core journals (the journals *Security Studies* and *International Security*), it could fail to represent the field's diversity and miss important areas of overlap with planetary health. Therefore, it was necessary to ensure that the formal literature review encompasses both traditionalist and non-traditionalist understandings of security. Second, it suggests that planetary health problems might be engaged in different ways by different sections of the field, which needs to be considered when developing explanations for potential barriers to engagement. Third, it suggests that any examination of the relationship between security and planetary health will need to incorporate grey literature (non-academic policy-focused literature), so this approach is adopted in the three case studies below.

Potential barriers to engagement between security studies and planetary health

Given the breadth and diversity of security studies, there are unsurprisingly many instances of specific planetary health problems being addressed within the field. Throughout this preliminary literature review, discussions of droughts, floods, pandemics, starvation, environmental pollution, deforestation

²⁴ Buzan and Hansen, *The Evolution of International Security Studies*.

²⁵ Buzan and Hansen.

²⁶ The field is sometimes referred to as “international security studies” for this reason. Buzan and Hansen.

²⁷ Gyngell, “The Rumble of Think Tanks: National Security and Public Policy Contestability in Australia”; Lawrence et al., “Where Is the Evidence?”

and many other problems of planetary health were found within the security studies literature. At the same time, the team also identified a lack of direct engagement with, or even explicit acknowledgement of, the planetary health research agenda within security studies. Similarly, no reference to security studies was found within the planetary health literature during this preliminary literature review.

To identify potential barriers to engagement between security studies and the planetary health research agenda, in line with the project's first objective, four propositions were developed to be assessed in the formal literature review.

First, there were strong signs of a lack of awareness of the concept of planetary health as an established research agenda. It was immediately apparent that the term "planetary health" did not seem to appear in key security studies journals, nor were the foundational texts cited. Similarly, issues of the natural environment and public health are rarely combined with each other within security studies, while the planetary health literature routinely combines them, again suggesting that participants in security studies may be unaware of this approach. This led to the first proposition of a barrier limiting security studies' engagement with the planetary health research agenda: *A lack of awareness.*

Second, it also appeared that when planetary health concerns were discussed in the security studies literature, such as the concept of environmental security, there was a tendency to seek to use these concerns to displace the traditional concerns of security studies (namely violent conflict) rather than to seek ways to combine them. For example, concepts such as environmental security, human security, and health security were often used instead of traditional security concepts like national security and international security. This is not necessarily a problem, as these are valuable concepts, but it raises the possibility that, by displacing traditionalist understandings of security, those security scholars who are more inclined to address planetary health problems miss opportunities to identify overlaps between the concerns of more traditionalist security scholars such as inter-state conflict, terrorism, and great power competition, which could contribute to planetary health concerns failing to have broader purchase in the field of security studies.

There were also arguments, particularly in the grey literature, that planetary health crises such as climate change and pandemics should be understood as national security or international security threats in themselves. Such an approach seeks to maintain traditional security concepts, but displaces traditionalist understandings of what they *involve* and what the nation-state or international community should seek to secure.²⁸ Again, this tendency to seek to displace the traditional concerns of security studies could contribute to keeping planetary health concerns estranged from the central research agendas in security studies. This led to the second proposition: *A tendency towards displacement, rather than engagement, of traditional inter/national security concerns.*

Third, another apparent tendency identified in the preliminary literature review was that when planetary health concerns were addressed in security studies, in a manner that engaged with traditional national security and international security concerns, the engagement often appeared to be one-sided. The focus was often on how planetary health crises could impact security concerns, such as whether climate change or drought could increase the prospects of violent conflict. There appeared

²⁸ Behm, "Re-Thinking National Security in the Age of Pandemics and Climate Change Catastrophe."

to be less attention to the other direction; how security concerns could impact planetary health, though there are certainly exceptions. Though this is indeed a form of engagement, in the sense of *drawing on* planetary health related research, it misses an opportunity for security studies to *contribute to* planetary health research. This led to the third proposition: *A tendency towards one-sided engagement*.

Fourth, it was also apparent that security studies is quite a fragmented field, and that there is a particular contrast between the concerns of the field's main journals and much of the grey literature produced by think-tanks and other outlets. For example, the recent bushfires and COVID-19 pandemic have prompted security-oriented think-tanks and research centres in Australia to focus more on planetary health concerns, but this does not yet appear to be reflected in the field's core journals. This led to the fourth proposition: *A fragmentation of focus*.

In summary, the preliminary literature review identified four potential barriers that limited the field of security studies' engagement with the planetary health research agenda:

1. *A lack of awareness.*
2. *A tendency towards displacement, rather than engagement, of traditional inter/national security concerns.*
3. *A tendency towards one-sided engagement.*
4. *A fragmentation of focus.*

The formal literature review below assesses whether these propositions hold up empirically, and develops additional explanations.

Parameters of the formal literature review

Based on the understandings of the two fields developed in this preliminary literature review, the project team decided to limit the formal review of international academic literature to articles published in 2015 or afterwards, given that the *Lancet* and the Rockefeller Commission proposed the planetary health research agenda that year. It was further decided to limit the formal literature review to research articles and review articles, but not book reviews, correspondence pieces, interviews and other types of articles.

The next step was to identify the journals that could be considered representative of the field of security studies, to conduct the searches within. A starting point was provided by an article from the journal *Security Studies* which provided an overview of the state of the field. The article, "The Blind Men and the Elephant: Comparing the Study of International Security Across Journals", examined 12 key journals: the *American Political Science Review*, the *American Journal of Political Science*, the *British Journal of Political Science*, the *European Journal of International Relations*, *International Organization*, *International Security*, *International Studies Quarterly*, the *Journal of Conflict Resolution*, the *Journal of Peace Research*, the *Journal of Politics*, *Security Studies* and *World Politics*.

Reflecting the field's somewhat unclear boundaries, due to its broad and diverse nature, only two of these journals would be unambiguously considered security studies journals: *International Security*

and *Security Studies*. The review article described them as the field's "two core, traditional journals".²⁹ The other journals included "general political science journals" and "IR [international relations] field journals", reflecting security studies' position as a sub-field within international relations and political science. For this reason, the review article did not treat all articles in these journals as security studies articles; they were only included if they addressed issues such as "interstate war, arms control, military power, strategy, alliances, and defence spending, among others... civil war and domestic terrorism."³⁰

This provided the project team with an initial list of 12 journals. However, given the lack of clarity over the extent to which these journals addressed security issues (and therefore, how helpful they would be to this project's review of security studies), a search was conducted for key terms such as "security" or "conflict". It was found that six of the journals had rarely addressed such issues during the past five years (for example, during this period the term "security" had only appeared in the journal *World Politics* seven times, and in the *British Journal of Political Science* 12 times). Consequently, these six journals were removed from the list: the *American Political Science Review*, the *American Journal of Political Science*, the *British Journal of Political Science*, *International Organization*, the *Journal of Politics* and *World Politics*.

Four new journals were added. These included *International Affairs* and the *Australian Journal of International Affairs*, which were the most prominent international relations journals from the UK and Australia respectively. Both these journals had a strong track record of explicitly addressing security issues. These journals were also added to ensure that the list was less focused on the United States than the initial list, and to ensure relevance to Australia. The other two journals added were the *Journal of Strategic Studies* and *Security Dialogue*, which were chosen to ensure the formal literature review would have appropriate breadth along the spectrum of traditionalist and non-traditionalist approaches. The *Journal of Strategic Studies* represents an approach to studying security that is considered so traditionalist that it is often no longer regarded as (or likely for its scholars to self-identify as) part of security studies. The approach is instead considered to be part of a separate field, strategic studies, reflecting a divide that emerged in recent decades in response to non-traditionalist approaches to studying security.³¹ The journal *Security Dialogue* sits closer to the other end of the spectrum, as one of the key journals within what is often called critical security studies. Including these journals ensured that the formal literature review would be broad enough to cover a wide range of both traditionalist and non-traditionalist approaches to security studies.

The resulting list contained ten journals:

- *European Journal of International Relations*
- *International Security*
- *International Studies Quarterly*
- *Journal of Conflict Resolution*
- *Journal of Peace Research*
- *Security Studies*
- *International Affairs*
- *Australian Journal of International Affairs*

²⁹ Hoagland et al., "The Blind Men and the Elephant," 429.

³⁰ Hoagland et al., 400.

³¹ Zammit, "Security Studies versus Strategic Studies," April 24, 2016; Zammit, "Security Studies versus Strategic Studies," May 24, 2016.

- *Security Dialogue*
- *Journal of Strategic Studies*

The next step was to select the search terms. From the research conducted for this the preliminary literature review, the project team judged it as unlikely that many articles would explicitly refer to “planetary health”. This was quickly confirmed when searches for the term “planetary health” in these ten journals produced no results at all. However, it had also identified that it was common for academic literature to discuss problems of planetary health without using the terminology of planetary health. Consequently, search terms were chosen to encompass the broad problem area of planetary health.

The key criteria for deciding the search terms was that each term would need to encompass as many articles relevant to planetary health as possible without being likely to result in an excessively large amount of irrelevant articles. For example, the term “climate” would help to capture a large number of articles on climate change, a core planetary health problem. However, it could also capture articles that happen to mention the “political climate” surrounding various issues unrelated to planetary health, which appeared likely as these journals tended to fit within the disciplines of political science and international relations. As a result, the team used the search term “climate change” but not “climate” by itself. The term “environment” could similarly have resulted in many articles unrelated to planetary health, given that the “security environment” is a term often used within security studies. Consequently, “environment” was not included as a search term, but “natural environment” and “environmental” were, as the team judged these terms as being more likely to turn up results concerned with planetary health subject matter.

The 14 final search terms were:

- "climate change"
- "Anthropocene"
- "natural environment"
- "environmental"
- "health"
- "pandemic"
- "ecological"
- "ecology"
- "food security"
- "bio-security"
- "human security"
- "extinction"
- "planet"
- "planetary"

The terms “health security”, “environmental security” and “planetary security” were not used in the search, even though these are concepts used within the field of security studies. This is because the inclusion of the terms “health”, “environmental” and “planetary” ensured that articles using those broader security concepts would still be captured. Having established the parameters for the formal

literature review, the next step for the preliminary literature review was to establish the parameters of the three case studies.

Parameters of the case studies

The purpose of the case studies was to provide detailed examinations of the ways in which some security threats, and actions taken to counter those security threats, can impact planetary health. Given that this preliminary literature review has highlighted multiple different understandings of security, it was first necessary to decide what sorts of security threats to focus on.

Some of the newer conceptions of security appear immediately relevant to the planetary health research agenda, particularly *health security* and *environmental security*. However, it was important not to excessively focus on one particular security lens at the expense of others, particularly because the nature of security problems is that they can often have complex impacts that are relevant to multiple understandings of security. For example, acts of terrorism can threaten not only *national security*, but also *international security* (by raising risks of inter-state conflict), and *human security* (the harm to the immediate victims and the wider society, through economic damage and disrupted governance), and can also threaten public safety, social cohesion, and multicultural harmony, and responses can invoke areas of governance such as policing and emergency management. In this context, the inherently complex nature of security threats means that security studies tends to be a pluralistic field, addressing security issues from multiple angles.³² This inter-relatedness shows that, to understand how security studies has engaged with planetary health, it is important to not only focus on those conceptions of security that would *appear* most immediately relevant, such as environmental security and health security. Instead, for the three case studies it was decided that this project would focus on *national security* threats, as national security is the conception of security of most concern for the Applied Security Science Partnership and its partners, such as DST.³³

National security is an understanding of security that establishes the nation-state as its primary focus. It is the most common conception of security advanced by national governments, and it is commonly understood as encompassing many different aspects, both external and internal. External aspects of national security include (but are not limited to) *defence* or *military security*. National security's external aspects also go beyond defence and military security to include the broader, non-military efforts of a nation-state to secure its position in the world, which brings in terms such as economic security, diplomacy, foreign policy, grand strategy, statecraft and many others. Internal aspects of national security include what is commonly called *domestic security*. For Australia, this can be understood as concerns listed in the Australian Security Intelligence Organisation's (ASIO) charter, and later its enabling legislation. In ASIO's current legislation, these are: "espionage", "sabotage",

³² Like many academic fields, the precise boundaries of security studies can be difficult to determine. This is not only due to the many different ways of conceptualising security, but also because the field overlaps with the study of security issues that have become specialist areas of study in their own right. Consequently, security studies often overlaps with fields such as terrorism studies, civil war studies, intelligence studies, strategic studies, military history and many other security-related fields, provided that they are generally within the social sciences.

³³ National security has relevance for DST both because military defence is a core component of national security, as traditionally understood, and because in recent years DST has been given a mandate to lead scientific efforts in support of national security areas that do not tend to come under Defence. This is most evident with the establishment of the National Security Science and Technology Centre (NSSTC) within DST, which coordinates with other government departments and agencies outside Defence through the National Security Science and Technology Inter-Departmental Committee (NSST IDC) and the Australia New Zealand Counter Terrorism Committee (ANZCTC). Similarly, the Applied Security Science Partnership's research so far has mainly been concerned with national security.

“politically motivated violence” (including terrorism), “the promotion of communal violence”, “attacks on Australia’s defence system”, and “acts of foreign interference” (including disinformation).³⁴ Since 2010, another concern listed for ASIO in the legislation is “the protection of Australia’s territorial and border integrity from serious threats”, which shows that *border security* has explicitly become treated as a core concern of domestic security. In other words, national security threats can take multiple forms, including military attacks, economic coercion, terrorism, espionage, foreign-orchestrated disinformation campaigns and many other others. This provides a wide range of options for the case studies to focus on.

However, sometimes health and environmental challenges are treated by national governments as, in part, national security problems. For example, in Australia both the summer 2019/2020 bushfires and the COVID-19 pandemic resulted in parts of the Australian Defence Force being mobilised, and required decisions by the federal government’s National Security Committee of Cabinet. However, for these case studies, treating these health and environmental challenges (which, as argued above, can be understood as planetary health problems) as national security threats in themselves could prove tautological given that the purpose of the case studies is to examine how security threats impact planetary health. Moreover, such an approach could risk *displacing* the traditional concerns of security studies in precisely the manner identified in proposition two: “*A tendency towards displacement, rather than engagement, of traditional inter/national security concerns*”. Such an approach could also risk *securitising* planetary health problems, when much of the security studies literature warns against securitisation. The purpose of the case studies is not to identify how planetary health problems impact security, but how security threats (and measures) can impact planetary health. Consequently, the case studies focus on threats that are *commonly treated as national security issues*.

The case studies therefore needed to examine how specific national security threats (and measures taken in response to these threats) can impact specific planetary health problems. The case studies also needed to be focused on specific locations, in line with Victoria University’s focus on *place-based* planetary health. To select the case studies, the team identified a range of options based on specific threats, planetary health problems, and locations, and discussed them with colleagues from DST. The following three cases were chosen:

Case study one: *Victoria’s response to the COVID-19 pandemic*

Focusing on Victoria, this case study examined the potential for a security threat, foreign-orchestrated disinformation, to cause indirect harm to planetary health by disrupting the response to the COVID-19 pandemic. It also examined how other security threats in the context of the COVID-19 pandemic, and security measures taken in response, could also risk causing indirect harm to planetary health.

Case study two: *South China Sea maritime security*

Focusing on the South China Sea, this case study examined the potential for a security threat, China’s grey zone activities as a means of territorial contestation, to cause both direct and indirect harm to planetary health by causing ecological damage to the marine environment and by challenging current approaches to environmental governance under international law. It also examined how responses to China’s grey zone activity could also risk causing harm to planetary health.

Case study three: *Great power competition and Antarctica*

³⁴ “Australian Security Intelligence Organisation Act 1979.”

Focusing on Antarctica, this case study examined a *potential* security threat (as the literature featured extensive debated about whether the threat exists) in the form of *possible* grey zone activities by Russia and China and the *prospect* of great power competition occurring over the frozen continent. It examined how this security challenge posed a threat of both direct and indirect harm to planetary health, through the impact of Russia and China's activities on the Antarctic eco-system and the broader challenge posed to the governance of Antarctica. It also examined how actions taken in response to Russia and China's activities could also risk harming planetary health.

Conclusion

This preliminary literature review has shown that planetary health and security studies are highly contrasting fields, situated in different academic disciplines with differing focuses. Planetary health is a new research agenda, within the health sciences and the natural and physical sciences, concerned with protecting the health of human societies and the natural systems upon which they depend. Security studies is a long-established field within the social sciences, particularly international relations, concerned with advancing understandings of security in a diverse range of ways.

Despite these differences, the preliminary literature review found considerable subject matter overlap between the two fields. Security studies often addressed planetary health problems (such as disease, drought, pollution and climate change) and sometimes treated planetary health problems as security concerns (through concepts such as health security and environmental security). However, this section found no evidence of security studies directly engaging with the planetary health research agenda. This preliminary literature review also found that security studies tended to engage with planetary health problems in only a limited range of ways, and consequently developed four propositions to help explain the barriers to engagement between the two fields, to be assessed in the formal literature review below.

This section also showed that the concept of planetary health encompassed a broad range of problems, and that the field of security studies approached the concept of security in a diverse range of ways. To account for this in the formal literature review, ten journals were chosen along with 14 search terms (in addition to the initial search term "planetary health").

Finally, this preliminary literature review also established the parameters for the three case studies, identifying three security threats (largely in the form of problems traditionally seen as national security threats) with the potential to impact planetary health problems in three specific places. These cases were: foreign-orchestrated disinformation and its potential impact on Victoria's response to the COVID-19 pandemic; China's grey zone activities in the South China Sea and its potential impact on protection of the marine environment; and Russia and China's widely-debated activities in Antarctica and their potential impact on the protection of the Antarctic eco-system.

Formal review of international academic literature

This section presents the formal literature review, which was conducted to identify barriers to engagement between the field of security studies and the planetary health research agenda, and the shortcomings that result from the limited engagement between the two fields. It first outlines the process of conducting the formal literature review. It then presents data on how many articles within ten security studies journals since 2015 engaged with planetary health problems, and on the nature of that engagement. It then discusses what this can tell us about the current state of engagement between the two fields, and whether the four propositions developed (in the preliminary literature review above) to explain the lack of engagement stand up to empirical scrutiny.

Conducting the formal literature review

As explained above, ten journals were chosen for the formal literature review. The selection started with the field's two core journals (*International Security* and *Security Studies*) and broadened to include various international relations journals, peace and conflict studies journals, a strategic studies journal and a critical security studies journal. This ensured a range of journals to encompass both traditionalist and non-traditionalist approaches to understanding security. The ten journals were: the *European Journal of International Relations*, *International Security*, *International Studies Quarterly*, the *Journal of Conflict Resolution*, the *Journal of Peace Research*, *Security Studies*, *International Affairs*, the *Australian Journal of International Affairs*, *Security Dialogue* and the *Journal of Strategic Studies*.

The searches were conducted on 18 October 2020, using the academic databases the journals were primarily associated with: TANDF, SAGEPUB, OXFORD ACADEMIC, and MIT PRESS. The searches were limited to articles published from 1 January 2015 onwards (the year the planetary health initiative was announced), and where possible filters were applied to exclude entries such as book reviews and interviews. At first, each journal was searched simply for the term "planetary health". This turned up zero results for each journal, and consequently there was no need to compile the results. Then, the following 14 terms were searched for each journal:

["climate change" OR "Anthropocene" OR "natural environment" OR "environmental" OR "health" OR "pandemic" OR "ecological" OR "ecology" OR "food security" OR "bio-security" OR "human security" OR "extinction" OR "planet" OR "planetary"]

The searches produced 1283 results, which were saved to Zotero and then exported to Microsoft Excel. The results for each journal were as follows:

Journal	Results
Australian Journal of International Affairs	148
Security Studies	48
Journal of Strategic Studies	83
European Journal of International Relations	145
Security Dialogue	136
International Affairs	237
International Security	55

International Studies Quarterly	130
Journal of Conflict Resolution	176
Journal of Peace Research	125
Total	1283

The next step was the title-based cull. This involved deleting all the articles which, assessed according to their titles, did not directly address a planetary health problem (broadly defined). Articles were kept if the title mentioned anything included in the search terms. Articles were also kept if they mentioned a theme that could plausibly encompass planetary health, based on the team's knowledge of the subject matter and the research conducted in the preliminary literature review. For example, if the title mentioned nuclear issues, resilience, human security issues, refugees, humanitarianism, development, disaster relief, natural resources, geography, space, the Arctic or Antarctica, it was kept in case it turned out to be related to planetary health. Some exceptions were made if it could be confidently judged from the title that the article was not likely to be related to planetary health, despite mentioning one of these topics. For example, titles that mentioned nuclear power or nuclear proliferation were kept, but those that only mentioned nuclear deterrence were deleted. Throughout this process, any articles that were found to be of an inappropriate format (such as book reviews) were deleted as part of a format-based cull, though this was rarely needed as the search filters had, with some exceptions, already accounted for this. This title-based cull resulted in the deletion of 1049 articles, leaving 234 articles remaining:

Journal	Results
Australian Journal of International Affairs	37
Security Studies	4
Journal of Strategic Studies	11
European Journal of International Relations	25
Security Dialogue	32
International Affairs	49
International Security	11
International Studies Quarterly	9
Journal of Conflict Resolution	28
Journal of Peace Research	28
Total	234

The next step was the abstract-based cull. At this point, it was important to be more considered. Articles were kept not only if the abstracts suggested clear relevance to planetary health, but also if they discussed areas that the preliminary literature review suggested were promising. In these latter cases, the articles themselves were examined to ascertain whether they should be kept. The general rule was that articles were only deleted if the abstract (or in some cases an examination of the article itself) suggested a clear lack of relevance to planetary health. This abstract cull was conducted in multiple stages, and involved two-team members cross-checking each others' decisions. By the end of the first stage, 155 articles remained. By the end of the second stage, 125 articles remained, presented below:

Journal	Results
Australian Journal of International Affairs	27
Security Studies	0
Journal of Strategic Studies	2
European Journal of International Relations	14
Security Dialogue	18
International Affairs	27
International Security	0
International Studies Quarterly	3
Journal of Conflict Resolution	15
Journal of Peace Research	19
Total	125

Results

The final step was to categorise the articles based primarily on their abstracts, but also by examining the articles themselves when the abstracts were insufficient for this purpose. Due to time constraints, the project team did not read all of these 125 articles in full, which was a limitation of this project. To conduct the categorisations, four binary (“YES” or “NO”) questions were asked of each of the articles.

The first question was whether the article explicitly mentioned the concept of planetary health. This question proved redundant, given that (to the team’s surprise) the term “planetary health” did not appear a single time, and it is only included here for completeness. The purpose of this question was to help assess the first proposition, that “a lack of awareness” functioned as a barrier to the field of security studies engaging with the planetary health research agenda.

The second question was whether the article engaged with what the team termed a “traditional inter/national security issue”. The definition of traditional national security and international security issues was based on research conducted as part of the preliminary literature review, and was debated within the team throughout the categorisation process. Examples included inter-state warfare, arms control, great power competition, territorial contestation, civil war, terrorism, piracy, and espionage. The purpose of this question was to help assess the second proposition, that “a tendency towards displacement, rather than engagement, of traditional inter/national security concerns” functioned as a barrier to the field of security studies engaging with the planetary health research agenda.

The third and fourth questions were asked only for those articles listed as “YES” for the second question. This meant that it was only applicable to those articles that both engaged with a planetary health problem (and therefore survived the abstract-based cull) *and* engaged with a traditional inter/national security issue. The third question was whether the article examined how a planetary health issue might impact a traditional inter/national security issue. The fourth question asked the opposite, whether the article examined how a traditional inter/national security issue might impact a planetary health issue. The purpose of both these questions was to identify the *direction* in which the engagement occurred, to help assess the third proposition that “a tendency towards one-sided engagement” functioned as a barrier to the field of security studies engaging with the planetary health

research agenda. These two questions were labelled 3a and 3b, rather than 3 and 4, to reflect that they were both concerned with the third proposition.

In addition, three open-ended questions were asked of each article. The first was whether (and how) the articles' subject matter revealed anything relevant to the fourth proposition, that "a fragmentation of focus" functioned as a barrier to the field of security studies engaging with the planetary health research agenda. The second open-ended question was what specific planetary health problems the article engaged with, and how it engaged with them. The third question was simply whether there was anything else to note about the article which would help explain barriers to engagement between the field of security studies and the planetary health research agenda.

The table below presents the number of articles found from each of the ten journals, searched for any mention of the 14 terms related to problems of planetary health between 1 January 2015 and 18 October 2020, that remained after the format-based cull, title-based cull and abstract-based cull. The table also provides the numbers of articles listed as "YES" in response to the four binary questions, along with the corresponding percentages:

1. Does the article explicitly engage with the concept of planetary health? (YES/NO)
2. Does the article engage with a traditional inter/national security issue? (YES/NO)
- 3a. Does the article examine how a planetary health issue might impact a traditional inter/national security issue? (YES/NO)
- 3b. Does the article examine how a traditional inter/national security issue might impact a planetary health issue? (YES/NO)

	Articles	YES for 2	YES for 3a	YES for 3b	% YES for 2	% YES for 3a, if YES for 2	% YES for 3b, if YES for 2
Australian Journal of International Affairs	27	9	1	6	33%	4%	67%
Security Studies	0	0	0	0	0%	0%	0%
Journal of Strategic Studies	2	1	1	1	50%	50%	0%
European Journal of International Relations	14	5	2	4	36%	14%	80%
Security Dialogue	18	1	1	0	6%	6%	0%
International Affairs	27	12	10	9	44%	37%	75%
International Security	0	0	1	2	0%	0%	0%
International Studies Quarterly	3	0	0	0	0%	0%	0%
Journal of Conflict Resolution	15	15	15	2	100%	100%	13%
Journal of Peace Research	19	17	15	2	89%	88%	12%
Total	125	60	46	26	48%	77%	43%

State of engagement

From the results above, at least three findings can be made about the current state of engagement between security studies and planetary health. First, the field of security studies does indeed address planetary health problems. The preliminary literature review argued that planetary health problems fitted within the subject matter of security studies, despite the field's lack of *direct* engagement with the planetary health research agenda. The results from the formal literature review support this argument, as 125 articles (from ten security studies journals over a period of nearly five years) survived the abstract-based cull.

The second finding is that this engagement occurs in a diverse range of ways. The 125 articles that survived the abstract cull addressed a diverse range of problems related to planetary health. This included issues such as drought, food scarcity, disease (including malaria, Ebola, HIV/AIDS and COVID-19), organ transplants, reproductive health, species extinction, defoliation, poaching, resource extraction, fishery depletion, whaling, water management, renewable energy, biodiversity, and nuclear power. A large number of articles (over 20) addressed climate change, which is one of the most pressing planetary health problems. Some of the articles addressed the concept of the Anthropocene, a driving imperative behind the creation of the planetary health research agenda.

The third finding is that security studies journals vary substantially in the extent to which they address planetary health problems, with the more traditionalist journals showing the least engagement. For example, four of the ten journals showed little to no engagement with planetary health problems. The journals *International Security* and *Security Studies* had no articles, at all, that survived the abstract cull. These two journals are often described as the “core” security studies journals, and are among the most traditionalist in the field. Similarly, the *Journal of Strategic Studies* had only two articles that survived the abstract cull, while the journal *International Studies Quarterly* had only three articles that survived the abstract cull.³⁵

In contrast, the other six journals showed considerable engagement with planetary health problems. Three of the four journals oriented towards international relations in general showed extensive engagement with planetary health issues (with the exception of *International Studies Quarterly*, mentioned above). *International Affairs* and the *Australian Journal of International Affairs* each had 27 articles that survived the abstract cull. Both journals were affiliated with think-tanks (Chatham House and the Australian Institute of International Affairs respectively), which could suggest a stronger policy orientation. The *European Journal of International Relations* had 14 articles. In addition, *Security Dialogue*, a key critical security studies (and therefore non-traditionalist) journal, had 18 articles that survived the abstract cull. The peace and conflict journals (which tend to have a strong focus on civil war rather than inter-state warfare) also had several articles that survived the cull and addressed problems of planetary health. The *Journal of Conflict Resolution* had 15 articles and the *Journal of Peace Research* had 19 articles.

In short, the formal literature review found that the field of security studies does address a range of planetary health problems, in various different ways. It also found that the more traditionalist journals were less likely to engage with planetary health problems. In contrast, the journals more oriented towards international relations in general (and potentially with a greater policy orientation), the study

³⁵ Strategic studies as an approach to studying security could be considered so traditionalist that it is now often considered a separate field, as security studies itself has evolved substantially.

of peace and conflict (particularly civil war), and critical security studies, were more likely to address planetary health problems.

Barriers to further engagement

The preliminary literature review also developed propositions to help explain why, despite the subject matter overlap, the field of security studies tended not to directly engage with the planetary health research agenda. Four potential barriers to greater engagement were identified:

1. *A lack of awareness.*
2. *A tendency towards displacement, rather than engagement, of traditional inter/national security concerns.*
3. *A tendency towards one-sided engagement.*
4. *A fragmentation of focus.*

The results of the formal literature were largely consistent with the first, third and fourth of these propositions, but not the second, as explained below.

“A lack of awareness”

The results of the formal literature review were largely consistent with the proposition that the field of security studies lacked an awareness of the planetary health research agenda. Not a single article published in these ten journals during the relevant time period (from January 2015 to 18 October 2020) mentioned the term “planetary health”. This does not in itself *demonstrate* a lack of awareness, as it could be that security scholars are aware of the planetary health research agenda but do not perceive it as relevant to their published output. However, given the extensive subject matter overlap, it could be expected that there would be at least a small number of articles debating whether the planetary health research agenda was worth directly addressing within the field of security studies. The absence of any mention of “planetary health” therefore suggests, though does not definitively prove, a lack of awareness of the planetary health research agenda in security studies.

“A tendency towards displacement, rather than engagement, of traditional inter/national security concerns”

In the preliminary literature review, it was contended that when the field of security studies engaged with planetary health problems, they would be engaged through non-traditionalist conceptions of security such as *environmental security* or *health security*. It was argued that these planetary health problems would tend *not* to be engaged with in a manner that examined their relationship to more traditionalist concepts of security centred on nation-states and violent conflict. It was suggested that this could result in planetary health problems being treated as irrelevant to more traditionalist concerns of security studies such as inter-state warfare, arms control, great power competition, territorial contestation, civil war, terrorism, piracy, espionage and others.³⁶

³⁶ As discussed in the preliminary literature review, the range of issues that might be considered “traditionalist” continues to evolve. For example, terrorism was once considered a non-traditional security threat but no longer tends to be. For this project, drawing on approaches that highlight evolving understandings of security, national security and international security concerns are treated as “traditionalist” while concerns coming under rubrics such as “human security”, “environmental security” and “food security” as “non-traditionalist”.

The results of the formal literature review were *not* consistent with this argument. The argument developed in proposition two suggested that the overwhelming majority of the 125 security studies articles that survived the abstract cull would not engage with traditionalist conceptions of national security and international security concerns. However, nearly half (48%) of the journal articles *did* engage with traditional inter/national security concerns.

Moreover, while the remaining journal articles (amounting to 52% of the 125 total articles) did not engage with traditional inter/national security concerns, they did not necessarily displace those concerns by promoting the importance of concepts such as *health security* or *environmental security* as rivals to *national security* and *international security*. Instead, many of the articles sought to deconstruct these concepts and warn against the *securitisation* of health and environmental problems.³⁷ For example, articles warned about the risks of securitising responses to pandemics, arguing that this could lead to injustices at border crossings and provide a rationale for discrimination.³⁸ Articles also warned of the risks of securitising responses to natural disasters, arguing that this could undermine efforts to address individual health and wellbeing.³⁹ Articles also warned of the risks of securitising climate change.⁴⁰ A common theme was that treating various health or environmental problems as security threats risked creating injustices and threatening human security. Not all articles took this approach, as many articles utilised concepts such as health security and environmental security without seeking to deconstruct them, but there was no overall trend of using these concepts to displace traditional national security and international security concerns.

Overall, the results of the formal literature review did not support the argument, developed in the preliminary literature review, that one barrier to engagement was that those security scholars who did address planetary health problems would not be inclined to engage with traditional security concerns. Indeed, the opposite might be true, as the more traditionalist journals were the least likely to address planetary health problems in any manner at all.

“A tendency towards one-side engagement”

The third potential barrier to greater engagement proposed in the preliminary literature review was that those scholars who did engage with the relationship between planetary health problems and traditional inter/national security concerns would do so in a one-sided manner. It was contended that these articles would tend to examine how a planetary health problem could impact a traditional security concern, rather than how a traditional security concern could impact a planetary health problem. This suggested, for example, that security studies literature would be more likely to examine how drought could impact the likelihood of civil war breaking out, rather than how civil war could impact the likelihood of drought occurring.

The results of the formal literature review were largely consistent with this proposition. Of the 60 articles that engaged with traditional security concerns, 46 of them (77%) did so in the anticipated direction, by examining how a planetary health issue impacts a traditional inter/national security issue. This was particularly the case for the *Journal of Conflict Resolution* and the *Journal of Peace Research*, the two journals oriented towards the study of civil war. Many articles in these journals

³⁷ Youde, “The Securitization of Health in the Trump Era”; Wenham, “The Oversecuritization of Global Health”; McInnes and Roemer-Mahler, “From Security to Risk”; Kirk, “From Threat to Risk?”

³⁸ Bengtsson, Borg, and Rhinard, “Assembling European Health Security”; Wenham and Farias, “Securitizing Zika.”

³⁹ Farrell, “Managing the Dead in Disaster Response.”

⁴⁰ Schäfer, Scheffran, and Penniket, “Securitization of Media Reporting on Climate Change?”

examined the impact that climate change, climate-induced food insecurity, climate-related disasters, drought, pandemics and resource extraction could have on the likelihood of violent rebellions breaking out.⁴¹ Other articles addressed the impact of planetary health problems on traditional security issues in other ways. One article examined how technological responses to climate change could spur competition and inter-state conflict.⁴² Multiple articles examined how damage to the marine environment, such as depletion of fish stocks, result in security issues including piracy and maritime contestation.⁴³ One article examined how the COVID-19 pandemic could impact great power competition.⁴⁴ Another article examined how climate change's impact on the Arctic could also influence great power competition.⁴⁵

In contrast, only 27 (44%) of the 60 articles that engaged with traditional security concerns did so in the opposite direction, by examining how a traditional inter/national security issue impacts a planetary health issue. Examples include an article on the potential for violent conflict in the Himalayas to cause dramatic environmental harm.⁴⁶ One article examined how geopolitical competition over Antarctica could undermine environmental management (a focus of one of the case studies below).⁴⁷ Another article examined how great power competition could undermine cooperation against climate change.⁴⁸ Another article examined how violent conflict disrupted the government of Afghanistan's efforts to enforce environmental protections.⁴⁹ Multiple articles examined how violent actors, including repressive governments, could use their control over food and water access as a weapon of war.⁵⁰ A number of the articles engaged in both directions by examining how a traditional inter/national security issue impacts a planetary health issue *and* how a planetary health issue impacts a traditional inter/national security issue. This last approach is consistent with the holistic emphasis of the planetary health research agenda.

Overall, of the 125 articles that survived the abstract cull, meaning that they were identified as engaging with planetary health problems, only 27 (22% of the total set) examined the impact of traditional international and national security issues on planetary health problems. In contrast, 46 articles (37% of the total set) examined the impact of planetary health problems on traditional security issues. This is largely consistent with the proposition that there has been a tendency towards one-sided engagement in the manner that security studies has, so far, addressed planetary health problems.

"A fragmentation of focus"

To address the question of "a fragmentation of focus", it was necessary to not only draw on the results of this formal review of the international academic literature, but also to contrast it with the policy-

⁴¹ Uexkull, d'Errico, and Jackson, "Drought, Resilience, and Support for Violence"; Yin, "Climate Shocks, Political Institutions, and Nomadic Invasions in Early Modern East Asia"; Ash and Obradovich, "Climatic Stress, Internal Migration, and Syrian Civil War Onset"; Roy, "Managing Resource-Related Conflict"; Bagozzi, "On Malaria and the Duration of Civil War"; Kustra, "HIV/AIDS, Life Expectancy, and the Opportunity Cost Model of Civil War"; Nardulli, Peyton, and Bajjalieh, "Climate Change and Civil Unrest"; Caruso, Petrarca, and Ricciuti, "Climate Change, Rice Crops, and Violence."

⁴² Lockyer and Symons, "The National Security Implications of Solar Geoengineering."

⁴³ Lindley, Percy, and Techera, "Illegal Fishing and Australian Security"; Bueger and Edmunds, "Beyond Seabirdness"; Bueger, Edmunds, and Ryan, "Maritime Security"; DeSombre, "The Security Implications of Fisheries."

⁴⁴ Norrlöf, "Is COVID-19 the End of US Hegemony?"

⁴⁵ Mehdiyeva, "Rivalry and Cooperation in the Arctic."

⁴⁶ Davis et al., "International Relations and the Himalaya."

⁴⁷ Bray, "The Geopolitics of Antarctic Governance."

⁴⁸ Bernstein, "The Absence of Great Power Responsibility in Global Environmental Politics."

⁴⁹ Johnson, "Institutional Change in a Conflict Setting."

⁵⁰ Martínez and Eng, "The Unintended Consequences of Emergency Food Aid"; Daoudy, "Water Weaponization in the Syrian Conflict."

focused grey literature examined in the preliminary literature review and the three case studies. This was done by examining to what extent this academic literature addressed the topics of the three case studies, which were all topics that there was a considerable amount of grey literature on.

In relation to case study one, none of the 125 articles that survived the abstract cull focused on disinformation. This contrasts with the rapidly growing body of grey literature addressing disinformation in relation to planetary health crises such as the COVID-19 pandemic, bushfires and climate change.

In relation to case study two, no article treated the South China Sea as its core focus. Territorial contestation in this region, along with China's grey zone activities, tends to be a popular topic in security studies. Yet none of these 125 articles that addressed planetary health problems focused primarily on the South China Sea, despite growing grey literature on the environmental implications of China's activities in the region.

However, a key caveat needs to be noted for case study two. While none of the 125 articles that survived the abstract-based cull focused specifically on the South China Sea, multiple articles focused on *maritime security* and defined it in a manner that encompassed planetary health problems. Two articles advocated a maritime security research agenda that would encompass the "*interconnected and sometimes interdependent nature*" of *national security*, the *marine environment*, *economic development* and *human security*.⁵¹ Multiple other maritime security articles, examined in this formal literature review, adopted this approach.⁵²

In relation to case study three, only two of the 125 articles focused on Antarctica, and only one of these was concerned with the prospect of great power competition and its impact on Antarctic governance (and its consequent environmental implications).⁵³ This again contrasts with the extensive grey literature on this topic.

This broadly supports the proposition that a fragmentation of focus helps explain the limited engagement between security studies and the planetary health research agenda. The ten academic journals examined here have tended not to focus on some of the key areas of overlap between security issues and planetary health problems that have been addressed in the grey literature. This includes the three topics chosen for the case studies, which have all been engaged with in the policy-oriented grey literature.

Furthermore, there have been several NGO and think-tank initiatives that address security issues and planetary health problems in a holistic manner. This includes the Wilson Center's Environmental Change and Security Program (ECSP), which examines "the connections between environmental change, health, and population dynamics and their links to conflict, human insecurity, and foreign policy."⁵⁴ This also includes the Stable Seas program launched by One Earth Future, which emphasises the relationship between security issues such as piracy, terrorism and illegal fishing and planetary health problems such as protecting the marine environment and the welfare of coastal communities.⁵⁵

⁵¹ Bueger, Edmunds, and Ryan, "Maritime Security," 973–74. Emphasis in original.

⁵² Lindley, Percy, and Techera, "Illegal Fishing and Australian Security"; DeSombre, "The Security Implications of Fisheries"; Rubin and Eiran, "Regional Maritime Security in the Eastern Mediterranean."

⁵³ Bray, "The Geopolitics of Antarctic Governance."

⁵⁴ "Environmental Change and Security Program."

⁵⁵ "Stable Seas Maritime Security Index."

These holistic approaches tended not to be reflected in the 125 articles examined here, although there were some exceptions, particularly the maritime security articles.

One reason for this could be the pace of academic publishing (particularly in relation to topics such as disinformation about the COVID-19 pandemic). Another reason could be that these are areas of current concerns to national governments and are therefore more likely to be addressed in grey literature, as think-tanks and other non-academic institutions may have a stronger policy focus, than in the academic journals.

Conclusion

This formal review of the international academic literature assessed the state of engagement between the field of security studies and the planetary health research agenda. It found that the field of security studies does address a range of planetary health problems, such as drought, food scarcity, disease, reproductive health, species extinction, defoliation, poaching, resource extraction, fishery depletion, whaling, water management, renewable energy, biodiversity, and many others, in a wide range of ways. It also found that some security studies journals, particularly ones based on more traditionalist understandings of security, were far less likely to address planetary health problems. In contrast, those journals oriented towards international relations in general (and potentially with a greater policy orientation), the study of peace and conflict (particularly civil war), and critical security studies, were more likely to address planetary health problems.

This formal literature review did not find compelling evidence for one of the four proposed barriers to engagement, that those parts of the field that did address planetary health problems would tend to displace, rather than engage with, traditional international and national security concerns. However, it found empirical support for the other three barriers to engagement proposed in the preliminary literature review, strengthening the argument that a lack of awareness, a tendency towards one-sided engagement, and a fragmentation of focus, help to explain the field's lack of direct engagement with the planetary health research agenda.

Several shortcomings result from this lack of direct engagement. As the sections above have shown, planetary health problems do come within the subject matter of security studies. As the case studies below elaborate on, security issues impact planetary health. However, by not directly engaging with the planetary health research agenda, the field of security studies misses key ways to address these problems. The field also misses opportunities for holistic understandings of the relationship between traditional security issues and planetary health problems, despite the field's emphasis on the interconnectedness of various understandings of security. There were some significant exceptions to this, particularly in the maritime security literature. This also means that the academic field of security studies misses opportunities to contribute to some key policy concerns, as demonstrated by growing grey literature on some key topics that tended not to be addressed in the examined journal articles. Finally, this also means that security studies misses some opportunities to demonstrate its relevance to helping protect the planet, even though this is a goal that (as shown by the rise of concepts such as environmental security) is important to many in the field.

Case studies

These exploratory case studies identify ways that security threats can impact planetary health, and also ways that actions taken to counter those threats could also risk harming planetary health. The case studies draw on journal articles from the formal review of international academic literature, and also incorporated other academic literature as well as a considerable amount of policy-oriented grey literature.

The first case study examines foreign-orchestrated disinformation and its potential impact on Victoria's response to the COVID-19 pandemic. The second case study examines China's grey zone activities in the South China Sea and its potential impact on protection of the marine environment. The third case study examines Russia and China's widely-debated activities in Antarctica and their potential impact on protection of the Antarctic eco-system.

Case study one: Victoria's response to the COVID-19 pandemic

This case study examines the State of Victoria's response to the COVID-19 health crisis and the potential for security threats to have impacted the response. The security threat this case study focuses on is foreign-orchestrated disinformation. Foreign-orchestrated disinformation refers to organised campaigns by foreign principals to knowingly promote false or misleading information for political purposes. It draws on Australia-focused grey literature on COVID-19 and foreign disinformation, as well as broader literature on disinformation and the management of health crises.

The study first outlines the COVID-19 health crisis and Victoria's response. It then explains the concept of disinformation and the rise of disinformation campaigns which appear intended to undermine effective responses to COVID-19. It examines the relevance of this disinformation to Victoria and the potential impact it could have, which has fortunately remained limited thus far. To understand why the impact has been relatively limited, the study explores the concepts of *trust* and *resilience*. The study then briefly examines other security threats with the potential to undermine Victoria's response to the COVID-19 pandemic and ways that actions taken to counter those threats could also inadvertently risk undermining planetary health.

Disinformation

Disinformation refers to "false or intentionally misleading information that aims to achieve an economic or political goal."⁵⁶ Disinformation has long been a tool of statecraft, whether targeted at enemy governments or targeted more broadly at populations.⁵⁷ During the Cold War both the United States and the Soviet Union carried out disinformation campaigns targeting the populations of rival regimes, to undermine trust in the systems they lived under.⁵⁸

⁵⁶ "What's Being Done to Fight Disinformation Online."

⁵⁷ An example of disinformation targeted at enemy governments would be Operation Fortitude during the Second World War, when the Allies used a disinformation campaign to deceive the German government to believe that the D-Day landings would be at a locations other than Normandy. See: Cubbage, "The Success of Operation Fortitude."

⁵⁸ Thomas Rid argues that Western disinformation campaigns directed at the populations of Eastern bloc countries de-escalated after the early 1960s, while Soviet disinformation campaigns continued on a large scale throughout the Cold War. The United States and its allies

While disinformation can be carried out by both authoritarian regimes and democracies, authoritarian regimes have been its most prolific practitioners, as deception is already a core component of their system of government. Farrell and Schneier argue that democracies, “are vulnerable to information attacks that widen contested political knowledge so that it spills over into disagreements over the common political knowledge that democracy needs to operate.”⁵⁹ One of the most famous historical disinformation campaigns, particularly relevant to the COVID-19 era, was *Operation Infektion*. This was a covert campaign launched by the Soviet Union in 1983 to spread the conspiracy theory that the United States government had created HIV/AIDS.⁶⁰ Disinformation campaigns can also, as suggested by the definition above, make use of intentionally misleading information rather than purely false information. One method for manipulating authentic information has been “hack-and-leak” operations, infamously demonstrated by Russia’s interference in the United States 2016 Presidential election.⁶¹

As technological developments in recent decades have reshaped how information is produced and shared, disinformation campaigns have correspondingly changed.⁶² A key development has been the growth of social media, which refers to “electronic communication and networking sites that allow users to follow *and* share content... and ideas within an online community”, of which Facebook, Twitter and YouTube are the three most prominent platforms.⁶³ The growth of social media has gone hand in hand with the global spread of internet connectivity and the increasing penetration of online activity into everyday life, including via devices such as smartphones. Larger numbers of people now use the Internet, and do so more often.⁶⁴

One result of this is that disinformation campaigns have become more prevalent. The online environment has also enabled many different countries to participate in disinformation campaigns, including countries with little earlier history of such activities.⁶⁵ Disinformation campaigns have also taken new forms.⁶⁶ During the Cold War the Soviet Union’s disinformation campaigns were often highly sophisticated, cultivating plausible-sounding stories to fool professional journalists. Some modern disinformation campaigns instead promote multiple contradictory stories with little concern for their plausibility. Russia’s approach has been described as the “firehose of falsehood” model, where the aim is not to persuade anyone of one specific version of events but to “dismiss the critic, distort the fact, distract from the main issue, and dismay the audience.”⁶⁷ For example, Russia promoted “at least a half dozen” different theories to deflect blame for the tragedy of MH17, when a civilian airliner was shot down by Russian-backed separatists in Ukraine in 2014 (killing 289 people including 38 Australians), even though these theories often contradicted one another.⁶⁸

nonetheless carried out disinformation campaigns in certain contexts after the 1960s, such as during the operation to destabilise the government of Salvador Allende in Chile in the early 1970s. Rid, *Active Measures*.

⁵⁹ Farrell and Schneier also demonstrate that there has been a shift in thinking about how open flows of information can challenge not only authoritarian regimes, but democracies too. Farrell and Schneier, “Common-Knowledge Attacks on Democracy,” 11–13.

⁶⁰ Singer and Brooking, *Likewar*, 104.

⁶¹ Rid, *Active Measures*; Shires, “The Simulation of Scandal”; “Notes on the Mueller Report.”

⁶² Karpf, “Two Provocations for the Study of Digital Politics in Time”; Rid, *Active Measures*.

⁶³ Zeitzoff, “How Social Media Is Changing Conflict,” 2. (emphasis in original)

⁶⁴ Sacasas, “The Analog City and the Digital City.”

⁶⁵ Bradshaw and Howard, “The Global Disinformation Order.”

⁶⁶ Rid, *Active Measures*; Shires, “The Simulation of Scandal.”

⁶⁷ Paul and Matthews, “The Russian ‘Firehose of Falsehood’ Propaganda Model: Why It Might Work and Options to Counter It”; Singer and Brooking, *Likewar*, 107.

⁶⁸ Singer and Brooking, *Likewar*.

Disinformation has been a security concern for Australia well before the COVID-19 pandemic, as part of a broader concern about foreign interference. Under legislation introduced in 1979, the Australian Security Intelligence Organisation (ASIO) defines foreign interference as activities “directed or subsidised by or are undertaken in active collaboration with, a foreign power” that are “clandestine or deceptive” and “are carried on for intelligence purposes” or “for the purpose of affecting political or governmental processes” or “are otherwise detrimental to the interests of Australia.” ASIO’s public statements carefully distinguish foreign *interference* from foreign *influence*. Under ASIO’s definition, influence is not clandestine, deceptive or carried out with malign intent, unlike interference.⁶⁹ Foreign-orchestrated disinformation can be understood as coming under this definition of foreign interference, and therefore constitutes a national security concern. It is important to note that this is not the case if the disinformation has purely domestic origins, only if a role is being played by a “foreign power”. More recently, the notion of “foreign power” has been replaced in the official definitions by “foreign principal”, highlighting that non-state actors can also perpetrate acts of foreign interference including disinformation campaigns.⁷⁰

Successive Australian governments have been increasingly concerned about foreign interference, including disinformation, in recent years. Russian interference in the 2016 US election provided the backdrop, but several other countries were considered to pose a similar sort of threat, particularly China. In late 2016 the federal government commissioned a joint ASIO and Office of National Assessments (ONA) report on Chinese intelligence activities in Australia.⁷¹ In 2018, the Federal parliament passed the *National Security Legislation Amendment (Espionage and Foreign Interference) Act 2018* and the *Foreign Influence Transparency Scheme Act 2018*. Political leaders and senior security officials regularly spoke of the threat of foreign interference, sometimes elevating it above the terrorist threat that had previously dominated debates over national security. In September 2019, the outgoing ASIO Director-General stated that “terrorism has never been an existential threat to established states,” and “the counter-espionage and foreign interference issue, however, is something which is ultimately an existential threat to the state, or it can be an existential threat to the state.”⁷² The threat tended not to be discussed in the context of health challenges, but this began to change as the COVID-19 pandemic spread throughout 2020.

Foreign-orchestrated disinformation campaigns in the COVID-19 era

COVID-19, the deadly and contagious respiratory disease caused by the virus SARS-CoV-2, arguably presents the most pressing threat to human health in the world today. By the end of 2020, the disease had caused around one and a half million deaths world-wide, with many countries already facing a ‘second wave’ of the virus. Many who survived suffer from drawn-out symptoms colloquially known as ‘long COVID’ and many facing down permanent disability, conditions about which little is currently known.⁷³ The disease caused further harms by overloading hospitals, devastating economies, and

⁶⁹ Zammit, “ASIO’s Definition of Foreign Interference.”

⁷⁰ “ASIO Annual Report 2017–18,” 26; Barbaschow, “Countering Foreign Interference and Social Media Misinformation in Australia.”

⁷¹ Uren, “Declassify the Garnaut ASIO Report”; “The Journalist, the PM and the China Reset”; Garnaut, “Australia’s China Reset: The Rest of the World Is Watching How We Counter Beijing’s Campaign of Influence.”

⁷² Macmillan, “ASIO Chief Says ‘unprecedented’ Threat of Foreign Interference Is Most Serious Issue Facing Australia.”

⁷³ LaVergne, “How Many People Get ‘Long COVID’ – and Who Is Most at Risk?”

prompting restrictions on mobility, all of which will have long-term ramifications for physical and mental health that remain unclear.

As a sweeping global pandemic, COVID-19 can be understood as a planetary health crisis, and one that highlights the inter-connectedness of human health and the natural environment in the manner proposed by the planetary health research agenda. The emergence of the virus has been linked to urban growth, as human settlements have expanded into previously wild environments, disrupting delicate ecological balances and leading to an increased risk of humans coming into contact with new, unidentified or poorly understood pathogens that pose a threat to human health in the form of highly contagious diseases.⁷⁴ Other human activities which cause ecological destruction, including the destruction of rainforests and other sensitive environments for industrial farming and logging, and global warming, have similar potential to reshape this balance.. In these ways, increased human encroachments on nature can be seen to present risks to human health, in line with the core planetary health concern with the health of human societies and the natural systems upon which they depend.⁷⁵ As will be shown, the COVID-19 pandemic also demonstrates how security issues can impact responses to planetary health problems.

Given the widespread harm, anxiety and uncertainty caused by the COVID-19 pandemic, along with the geopolitical tensions and political divisions that were in play well before the pandemic, and the technological developments discussed above, the COVID-19 era has been ripe for disinformation. False claims flooded the information environment. This includes claims that the virus was created as a biological weapon (by either the United States, China, or another entity), that the virus does not exist, false claims about how the virus works or can be cured, or claims that various public health measures are sinister plots. These claims began to circulate almost as soon as the disease came to public attention. In February 2020 the World Health Organisation's Director General Tedros Adhanom Ghebreyesus stated that, "fake news spreads faster and more easily than this virus, and is just as dangerous."⁷⁶ He also later declared that, "we're not just fighting an epidemic; we're fighting an infodemic."⁷⁷

Inaccurate claims, including conspiracy theories, are not in themselves evidence of disinformation campaigns. Many (possibly most) of these false claims would not be disinformation but *misinformation*, spread without malign motives by large numbers of people who genuinely believe in them. However, the academic and grey literature provides evidence that many claims did originate in disinformation campaigns organised by state actors.

The Russian state appears to have played an early role in promoting COVID-19 disinformation, using "swarms of online, fake persona", according to a US State Department official who added that the "entire ecosystem of Russian disinformation is at play."⁷⁸ Much of this has targeted Ukraine, a state that Russia is currently in conflict with, including claims that the United States was testing a vaccine on Ukrainian soldiers with deadly results.⁷⁹ However, the purpose has also been to discredit the United

⁷⁴ "COVID-19 Shows the Link between Human and Planetary Health"; Vidal, "Tip of the Iceberg."

⁷⁵ Vidal, "Tip of the Iceberg."

⁷⁶ Kassam, "Disinformation and Coronavirus."

⁷⁷ Nations, "UN Tackles 'Infodemic' of Misinformation and Cybercrime in COVID-19 Crisis."

⁷⁸ Romm, "State Department Blames 'Swarms of Online, False Personas' from Russia for Wave of Coronavirus Misinformation Online."

⁷⁹ Thomas, "Covid-19 Disinformation Campaigns Shift Focus to Vaccines."