National Security in a Rapidly Changing World

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The difficulties many states are having in dealing with both the COVID-19 pandemic and the climate emergency suggests that contemporary security institutions have not been adequately prepared to deal with the novel circumstances of the twenty first century. The global fossil fueled economy, which has been seen for many decades as the key to security and prosperity, is now, because of rapid climate change, endangering humanity in numerous places. Traditional notions of security need a rapid overhaul based on a reconceptualization of the novel geopolitical and geophysical context encapsulated in the designation of present times as 'the Anthropocene'. Securing the ability to move to a post-fossil fueled world economy while constructing a robust public health system needs to be the policy priority for these new times.

Pandemic Times

The COVID-19 pandemic has raised crucial issues about how national security is now understood and implemented. The multiple failures to respond in a timely fashion to the spread of the disease have, by late 2020, generated the kind of casualty numbers in many states that might be expected from their involvement in a small war.[1] Coupled with wildfires, storms and now the numerous disruptions rippling through the global economy as a result of emergency measures taken to try to halt the spread of the virus, the failures of many governments to provide for the safety of their populations are palpable. The inadequate preparations to deal with an entirely predictable pandemic suggest a major failure in security planning.

National security is supposed to be the highest priority for state officials. If security institutions, broadly understood, are focused too narrowly on war fighting and preparing for future conflicts, but are not dealing effectively with the larger dangers that people in numerous places face in light of the new circumstances of the twenty first century, then clearly something is deeply wrong with how national security is being imagined and implemented. Not having effective warning systems, nor appropriate preparations in place to respond to the COVID-19 pandemic, led to a scramble to improvise policies and procedures throughout 2020. The economic disruptions from hastily implemented lockdowns have been huge; the initial difficulties in providing essential protective equipment emphasize the failure to plan effectively or to anticipate supply chain vulnerabilities in a global economy.

These challenges were all made worse by the rise of xenophobia and "populist" aversions to relevant and appropriate expertise, and in particular, to the hard won lessons about how to deal with infectious disease. Security priorities appeared to be awry in many places. As evinced by the case of the refusal of Republican politicians in the US to take climate change seriously despite repeated warnings from the US military in particular, politicians' perceptions of threat are often divorced from changing global realities.[2]

The scramble to deal with COVID-19 reflects larger scale failures of many institutions to grapple with the rapid changes simultaneously underway in human and natural systems. Both climate change, and the emergence of novel zoonotic diseases partly caused by habitat disruptions due to the continued intrusion of agriculture and hunting into "wild" landscapes, are symptoms of the larger scale human transformation of the earth system. Habitat changes and the resultant extinction crisis, coupled with accelerating climate disruptions, are the new human condition. These new circumstances are changing things on such a large scale that they constitute a new geological age in the planet's history, one now widely termed "the Anthropocene."[3]

The Anthropocene implies that traditional notions of national security and strategic studies, previously formed and institutionalized in the stabile environments of the 'Holocene' epoch during the Cold War as

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[1] As of mid 2020 the point was repeatedly made that the United States casualty rates in Vietnam and Korea were less than the numbers dying from COVID-19.
[2] Michael Klare *All Hell Breaking Loose* (New York: Metropolitan, 2019).
[3] See S. L. Lewis, and M.A. Maslin, *The Human Planet: How we Created the Anthropocene*. (London: Pelican, 2018).

a mode of collaboration between Western states, are now overdue for a major overhaul.[4] The new circumstances of the Anthropocene require very different modes of thought and policy provision, not least because the model of society and economy that national security has long protected is now the cause of dangerous contemporary disruptions. While the COVID-19 crisis presents immediate dangers, the larger disruptions to agriculture, industry and supply chains from climate change present similar novel threats which will persist and accelerate if they are not countered soon by effective policies.

The New Geopolitical Context

The climate crisis highlights the key point that past practices of economic growth, based mostly on the use of fossil fuels to power human end economic development, have now become the major threat to future prosperity. The Cold War's 'vintage' national security strategy was mostly about maintaining this mode of accumulation.[5] Yet, greenhouse gas emissions from this economy are now accelerating disruptions which are already endangering supply chains and such things as insurance and mortgage markets in coastal areas, as well as other places vulnerable to storms and wildfires.[6] Much more serious is the simple fact that remaining on this trajectory promises much greater climatic instability, which will threaten most aspects of economic activity far more fundamentally than traditional economic analysis has yet appreciated.[7]

Where a key part of national security provision used to be about ensuring the continuous supply of relatively cheap fuels, persisting with this mode of economy will clearly undercut precisely the affluence that these fuels used to make possible.[8] Hence, security policy now has to be about how to rapidly change energy systems and how to deal with the economic and social consequences of a rapid transition away from fossil fuels. The urgent necessity of reversing the growth in fossil fuel use has been slow to penetrate policy making circles in Western states, despite the policy rhetoric about climate change and the accession by most states to the 2015 Paris Agreement on Climate Change. The COVID-19 crisis and the failures to plan effectively for a pandemic highlights the need to think much more carefully about future novel dangers; like a pandemic, climate change disruptions are predictable too, and preparations to deal with them are urgently needed.

The rapid expansion of fossil fueled economies has happened simultaneously with the extension of agriculture into numerous previously uncultivated areas, only most obviously and recently in the headline-grabbing cases of forest clearing in Brazil and Indonesia. These land clearing processes, with their

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[4] On this cold war history see Bradley Klein *Strategic Studies and World Order: The Global Politics of Deterrence.* (Cambridge: Cambridge University Press, 1995).
[5] Daniel Yergin *The Quest: Energy, Security and the Remaking of the Modern World* (New York: Penguin, 2011).
[6] A point highlighted in the 2020 California wildfires: Christopher Favelle "Wildfire hasten another climate crisis: Homeowners who can't get insurance" *New York Times* (September 2 2020). https://www.nytimes.com/2020/09/02/climate/wildfires-insurance.html
[7] Steve Keen "The Appallingly bad neoclassical economics of climate change" *Globalizations* 2020. DOI: 10.1080/14747731.2020.1807856
[8] Jonna Nyman *The Energy Security Paradox: Rethinking Energy (In)Security in the United States and China.* (Oxford: Oxford University Press, 2018).

widespread burning of forests, add directly to climate change problems while simultaneously causing the elimination of habitat for numerous species. Earth system scientists emphasize that both climate change and this rapid reduction in biodiversity alone would be enough to cause dramatic changes to how the earth functions, but at the moment both are happening simultaneously.[9] Habitat disruption is also one of the causes of the emergence of novel zoonotic diseases as humans come into increased proximity with wildlife in the remaining uncultivated parts of the planet; recent Ebola outbreaks being a prime example of these dangers. Discussing these changes as key parts of a new geological age, the Anthropocene—or the 'human age'--emphasizes the point that the source of new dangers lies in these multiple and simultaneous transformations occurring at the global scale.

Preventing the earth from moving from the relatively stable situation that humanity has known throughout its Holocene history, into a novel condition of a rapidly fluctuating destabilized climate altogether less conducive for humanity -- a so called "hothouse earth" -- now has to be the overarching priority for any sensible security policy.[10] This is a very different set of priorities from those bequeathed to us from the Cold War's vintage models of prosperity, based on the ever larger exploitation of natural resources and the extensive use of fossil fuels to power development. These are the new circumstances of the Anthropocene, and security thinking has to be updated to ensure we have a functional global biosphere, rather than perpetuating a mode of economic security that is rapidly undermining the conditions that make its own existence possible. [11]

As both the COVID-19 pandemic and the rising toll of climate related disasters show clearly, the new context isn't just a matter of thinking about security in terms of competing states, their military capabilities, political influence and international agreements on arms control and much else; it is now also a matter of coping with the changing geophysical context as climate change and biological disruptions accelerate. Novel phenomena, such as new zoonotic diseases and extreme wildfires present new challenges to the health and wellbeing of people in numerous places. So too do rising sea levels, longer droughts and more damaging storms. The possibilities of these events intersecting with bad behaviour in cyberspace, or with non-attributable cyber-attacks actually creating physical disasters, as has been the case with major blackouts of national grids in recent years, links traditional national security concerns directly to novel disruptions and disasters. [12]

[9] W. Steffen, et al. "Planetary boundaries: Guiding human development on a changing planet." *Science*. 347, no. 6223. (2015). 1259855.

[10] Will Steffen, et al. "Trajectories of the Earth System in the Anthropocene." *Proceedings of the National Academy of Sciences.* 115, no. 33 (2018): 8252-8259.

[11] Simon Dalby *Anthropocene Geopolitics: Globalization, Security, Sustainability* (Ottawa: University of Ottawa Press, 2020).

[12] Chad M. Briggs, and Miriam Matejova, *Disaster Security: Using Intelligence and Military Planning for Energy and Environmental Risks* (Cambridge: Cambridge University Press. 2019).

Rethinking Security

More than a decade ago, in his reconsideration of geopolitics through history, Jakub Grygiel made the argument that states that fail to focus on their key national interests, and get distracted by foreign adventures that do not pertain to their central concerns with security and prosperity, are likely to suffer severe long-term consequences.[13] His analysis of the demise of Venice, a maritime trading state that became distracted by land wars on the Italian peninsula rather than focusing on maintaining its trading links, serves as just one such example of a failure to focus on priorities. He suggested that the United States might face the same problem if it fails to focus on a rising China while expending efforts elsewhere. Grygiel's argument made some sense more than a decade ago, in the context of large US military efforts in Iraq in particular. But it now seems that refocusing security on China while ignoring the rapidly mounting threats of climate change, ecological disruptions and, as the COVID-19 pandemic has shown a failure to heed early warnings about unconventional threats, suggests that American priorities are not focused on the larger threat of dramatic global ecological disruptions.

Much of the Western world is in a similar situation; the United Kingdom has invested a substantial part of its military budget in recent years in building two aircraft carriers but was unable to respond effectively to the COVID-19 pandemic. Military preparations for combat are effectively useless against pandemic dangers, even if the armed forces' logistical support of medical efforts may provide valuable assistance in dealing with disease outbreaks. To put the matter bluntly: stealth jet fighters are useless against stealthy viruses. And they cost an awful lot more than basic public health measures or medical research into vaccines.[14] While war has yet to banished from human history, other novel dangers require urgent attention in the Anthropocene; "non-kinetic" responses are needed for the novel threats of our times.

The economic and social chaos caused by the initial heavy-handed quarantine measures attempting to slow the spread of the COVID-19 virus suggest a failure of preparation for the provision of basic medical services. However, the larger failure of state security was in not acting on accumulated intelligence pertaining to this crisis, and indeed, not even thinking it was necessary. This occurred because the new context of a rapidly changing and interconnected world is still not taken as the benchmark condition within which policies need to be considered. The return of competitive, and sometimes xenophobic, nationalism has made thinking in terms of global contexts more difficult in policy circles.[15] In contrast however, the rapid innovations in medical research in response to the COVID-19 pandemic suggest all sorts of possibilities for collaboration. However, if this effort degenerates into vaccine nationalism and a failure to provide protection for the vulnerable regardless of their nationality, then a valuable opportunity to rebuild global monitoring capabilities and habits of cooperation will be wasted.

Despite clear warnings on the part of numerous agencies about the future emergence of pandemics, and lessons learned from dealing with SARS, Ebola and other infectious diseases, much of the world was

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[13] Jakub J. Grygiel *Great Powers and Geopolitical Change* (Baltimore: Johns Hopkins University Press, 2006).
[14] Adam Tooze "The World is Winning—and Losing—the Vaccine Race" *Foreign Policy* (September 19, 2020). https://foreignpolicy.com/2020/09/19/the-world-is-losing-the-vaccine-race/
[15] Al Bergeson and Christian Suter (eds) *The Return of Geopolitics* (Zurich: Lit, 2018).

caught napping by the COVID-19 virus.[16] In Canada, it has emerged that its global health monitoring facility, one of the truly useful contributions the country was making to global security, was effectively closed down prior to the pandemic on the grounds that it was an unnecessary expense.[17] The economic fallout from the scramble to slow the disease spread has been disastrous for many of the poorer residents of the Western world and numerous vulnerable people elsewhere. Better disease monitoring and warnings in advance are, as we have all just been reminded, a critical security investment. COVID-19 will not be the last pandemic of the twenty first century. [18]

As the world struggled to come to grips with the pandemic, another season of heatwaves, wildfires and tropical storms struck the Northern Hemisphere, months after Australia had struggled to deal with exceptionally severe fires. In the United States, the arguments about climate change causing both drought on the West coast and more severe tropical storms in the East, degenerated into arguments with President Trump about the science of climate change and his claims that the fires were all about forest mismanagement.[19] The more simple but fundamental point, made repeatedly in the literature on environmental security, was that more severe weather is playing out in increasingly artificial human circumstances.[20] Houses and infrastructure are built in areas where fire is a natural part of the ecology; fire suppression efforts in woodlands have increased the amount of fuel available to burn, and climate change aggravated droughts have made forests tinder dry, so that when ignition happens, the fires are very intense.

In a similar vein, the lack of any effective land use planning in the Houston area in particular has made numerous housing and industrial developments vulnerable to flooding, just as hurricane frequency is increasing in the Gulf of Mexico.[21] Security in these terms is about dealing with enhanced vulnerabilities, both because of climate change, and because of the many failures to consider the future consequences of climate change when economic decisions are made about what to build where. In so far as national security is about a functioning economy and a reliable infrastructure, then these modes of economic activity, powered by climate change inducing fossil fuel use, are actively undermining national security.

[16] Michael T. Osterholm and Mark Olshaker "Chronicle of a Pandemic Foretold" *Foreign Affairs* 99(4), 2020. p.10-24.

[17] Grant Robertson "Ottawa Appoints New Management to Strengthen Pandemic Surveillance" *The Globe and Mail* (September 15, 2020). https://www.theglobeandmail.com/canada/article-ottawa-appoints-new-management-to-strengthen-pandemic-surveillance/

[18] Both history and contemporary ecological disruptions suggest future zoonotic diseases will appear. This is not a new observation; scholars have long warned of pandemic dangers to global security: See Andrew Price-Smith *Contagion and Chaos: Disease, Ecology and National Security in the Era of Globalization* (Cambridge, MA: MIT Press 2009) and Stefan Elbe *Security and Global Health* (Cambridge: Polity 2019).

[19] On forestry practices in California and the dangers of wildfires see Elizabeth Weil "They know how to prevent megafires, Why won't anyone listen" *ProPublica* (August 28, 2020). https://www.propublica.org/article/they-know-how-to-prevent-megafires-why-wont-anybody-listen?token=aga2ana1uiyalbpftxzc6upde5d3vcz-

[20] Simon Dalby *Security and Environmental Change* (Cambridge: Polity, 2009).

[21] Michael Kimmelman and Josh Haner "Lessons from Hurricane Harvey" *The New York Times* November 11, 2017. https://www.nytimes.com/interactive/2017/11/11/climate/houston-flooding-climate.html?_r=0&smid=tw-nytclimate&smtyp=cur

This contradiction lies at the heart of the current crisis and the failure of governance to deal with the novel circumstances of our times: our Anthropocene age.

Anthropocene Security

Epidemics and economic disruptions cross national boundaries easily. Likewise, climate effects, and the knock-on effects of numerous ecological disruptions caused by land use transformation in particular, cross boundaries in numerous ways. The point is that national security is, more so than ever, a matter enmeshed in numerous transnational phenomena. These transnational processes are changing as the overall impact of the global economy modifies how the earth system functions. The term 'Anthropocene' – the human epoch – summarises these epochal transformations and has become a widely used term precisely because it articulates matters at the appropriate scale of the planetary system; as a totality undergoing dramatic rapid change due to humanity's steering of the global economy.

Globalization has increasingly interconnected economies and expanded communications across national boundaries, only most obviously in the use of social media and video hookups. Class-Zooms have been replacing classrooms around the world in response to the pandemic. While much of this is innocuous, the rising concerns on the part of the US security agencies about interference in elections highlights the point that politics too is happening in novel ways across national frontiers. While propaganda, the propagation of rumours and disinformation, and support for groups and organizations in other states, are longstanding practices of international politics, social media add a novel and more personal dimension to their dissemination. Likewise, both espionage and sabotage are now possible in cyberspace and international rivalries are playing out behind the scenes online too.[22] The rumours and resentments fuelling current populist protests further undermine public confidence in contemporary governance arrangements.

Added to these complicated politics is the realization by younger generations that the existing economic model, based on fossil fuels, is endangering the future relatively stable functioning of the biosphere in which all of us live. For those individuals born in this century, and for those who hope to live well into the second half of it, the trajectory towards major climate disruptions directly endangers prospects of living well into old age.[23] The signs of environmental disruption in rising severity of storms, melting ice caps and growing wildfires, not only in what have traditionally been Mediterranean climate zones, but also across boreal forests too, are very clear to anyone watching contemporary news media. School children who are on "climate strike" are doing just that. Their future security requires a relatively stable biosphere, not the further exploitation of fossil fuels. They need a world with a functioning global public health system too, ready to deal with novel diseases and their spread.

Dealing with these matters requires urgent action to rapidly decarbonize contemporary economies. Not doing so is the security threat to the health and wellbeing of the current generation of school children and

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[22] David Sanger *The Perfect Weapon War, Fear and Sabotage in the Cyber Age* (New York: Broadway, 2019).
[23] Extinction Rebellion *This is Not a Drill* (London: Penguin, 2019); Greta Thunberg, *No One is Too Small to make a Difference* (London: Penguin, 2019).

all future generations. Dismissing their protests as a form of radicalism is to get things precisely backwards. What they are demanding is in fact very conservative--a chance at a decent life in broadly predictable and relatively safe circumstances guaranteed by social arrangements focused on continuity of family, state and society; in other words, what school children on 'climate strike' demand is their future national security. At the time of writing, the 'radicals' are really those who insist on perpetuating dangerous fossil fueled modes of economy, despite the clear warnings of dramatic social and economic disruptions that will endanger all societies if this economic model persists.

Firepower, both in terms of weapons based mostly on combustive force and propelled by combustion in numerous engines, may have been the basis of security for many societies in the twentieth century; but now the economy that provided this technology is dramatically endangering the future wellbeing of most of humanity.[24] Further investments in fossil fuel exploration, the opening up of protected spaces, pipeline construction and related activities perpetuate ecological destruction rather than providing meaningful security in any sense. This is the new context of an interconnected world epitomised by the term Anthropocene, and requires a very different set of security priorities to shape the future configuration of the earth system in ways that will facilitate human flourishing in the long run.

Shaping the Future

While the short term responses to disasters are of importance to security planners, the long term issues of global transformation are a much larger issue in terms of national security. What is needed is to rapidly transition societies into new energy systems that do not rely on combustion and to simultaneously shape urban consumption practices so they do not need extensive supplies of resources from rural landscapes.[25] Reducing the disruptive consequences that resource extractions have on wildlife and their ecosystems is now also necessary both to reduce the dangers of zoonotic diseases and to keep the earth system in something analogous to what humanity has known over the last few millennia. Part of this exercise will require learning how individuals and communities can live well without burning things, fossil fuels and forests in particular.

Prioritizing this direction requires rapid innovation in many parts of the global economy, innovations which include the phasing out of fossil fuel use and which also reflect the rethinking of health and social policy.[26] Such transformed approaches will be disruptive to many economies, in particular to those dependent on oil revenues for substantial parts of their national budgets. Petrostates are going to face severe transition shocks if they do not plan for an economy that comes after fossil fuels.[27] Some of these consequences of transitions have already emerged in recent years. Relatively low oil prices are causing

[24] Simon Dalby, "Firepower: Geopolitical Cultures in the Anthropocene." *Geopolitics*, 23(3), 2018. 718–742.
[25] Peter J. Taylor, Geoff O'Brien and Phil O'Keefe *Cities Demanding the Earth: A New Understanding of the Climate Emergency* (Bristol: Bristol University Press, 2020).
[26] Bjorn-Ola Linner and Victoria Wibeck *Sustainability Transformations: Agents and Drivers across Societies* (Cambridge: Cambridge University Press, 2019).
[27] Global Commission on the Geopolitics of Energy Transformation. *A New World: The Geopolitics of the Energy Transformation* (www.geopoliticsofrenewables.org). 2019.

budget difficulties in many places, not just in Venezuela and Saudi Arabia, but also in Alberta and other resource dependent jurisdictions. In the words of the *Economist* magazine, the geopolitics of this transition is going to be "messy"[28], but failure to make these transitions will be much more than messy for future generations.

Put simply: what needs to be secured is the capacity to adapt peacefully.[29] Moves to restart economies after the COVID-19 pandemic present a unique opportunity to move in this direction with novel investments in new infrastructure and energy sources.[30] The task is urgent, but while economic reconstruction needs to be done ambitiously, it is folly to do it while ignoring looming climate change dangers. Technological innovations, and related infrastructure construction, done now properly, will lock-in energy consumption patterns for decades into the future. Moving rapidly away from fossil fuels is key to future security even if the short-term economic changes are painful for some sectors of the economy.

Facilitating these transitions, rather than perpetuating fossil fueled economic modes, is now a key part of national security planning. A functional global biosphere is a *sine qua non* for human survival. Core elements of what constituted strategies of national security in the twentieth century now risk undermining future possibilities. This necessitates a shift in focus away from energy based on resource extraction, acquisition, and combustion, to making flourishing ecosystems. This is a very different set of policy priorities and may be anathema to traditionally trained security analysts. However, the new geopolitical circumstances of our Anthropocene times, highlighted by the intersecting crises of pandemics, ecological transformation and the fragility of contemporary economic arrangements, makes such new thinking the essential basis for sensible security policies in the future.

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[28] *The Economist* "Is it the end of the Oil Age?" 17 September 2020. https://www.economist.com/leaders/2020/09/17/is-it-the-end-of-the-oil-age The related *Economist* Special Report Business and Climate Change phrases matters in terms of climate change as "The Great Disruptor" https://www.economist.com/special-report/2020/09/17/the-great-disrupter
[29] H.G. Brauch, U. Oswald Spring, J. Grin, and J. Scheffran, (eds.) **Sustainability Transition and Sustainable Peace Handbook** (Heidelberg–New York–Dordrecht–London: Springer-Verlag. 2016).
[30] In the Canadian context see: Jatin Nathwani "Corona Virus, Climate and a Clean Energy Transition: Is Resiliency Achievable?" *Balsillie Papers* 1(1) April 2020. https://balsilliepapers.ca/bsia-paper/coronavirus-climate-and-a-clean-energy-transition-is-resiliency-achievable/ And the Task Force for a Resilient Recovery *Bridge to the Future: The Final Report* September 2020. https://www.recoverytaskforce.ca/wp-content/uploads/2020/09/TFRR-Final-Report_EN.pdf

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