# 2NC---Dartmouth---Round 4

## ASPEC

### Theory---Conditionality---2NC

## Impact

### Link---2NC

#### Localization solves their impact---resources spread AND the alternative has a solution-multiplier effect.

Polychroniou ’22 [CJ; January 5; political scientist/political economist, author, and journalist who has taught and worked in numerous universities and research centers in Europe and the United States; Global Policy Journal, “Localization” Can Help Free the Planet From Neoliberal Globalization,” https://www.globalpolicyjournal.com/blog/05/01/2022/localization-can-help-free-planet-neoliberal-globalization]

I see a shift toward economic localization as a powerful strategic alternative to neoliberal globalization for a number of reasons. For starters, the increasingly planetary supply chains and outsourcing endemic to corporate globalization are systematically making every region less materially secure (something that became starkly apparent during the COVID crisis) and enabling ecological and labor exploitation cost shifting such that feedback loops that could promote greater transparency and thus responsibility are severed. A recent study showed that one-fifth of global carbon emissions come from multinational corporations’ supply chains. Localization means getting out of the highly unstable and exploitative bubbles of speculation and debt, and back to the real economy — our interface with other people and the natural world. Local markets require a diversity of products, and therefore create incentives for more diversified and ecological production. In the realm of food, this means more diversified production with far less machinery and chemicals, more hands on the land, and therefore, more meaningful employment. It means dramatically reduced CO2 emissions, no need for plastic packaging, more space for wild biodiversity, more circulation of wealth within local communities, more face-to-face conversations between producers and consumers, and more flourishing cultures founded on genuine interdependence.

This is what I call the “solution-multiplier” effect of localization, and the pattern extends beyond our food systems. In the disconnected and over-specialized system of global monoculture, I have seen housing developments built with imported steel, plastic and concrete while the oak trees on-site are razed and turned into woodchips. In contrast, the shortening of distances structurally means more eyes per acre and more innovative use of available resources.

#### Resilient ports mitigate trade disruptions. This is there highlighting.

Dr. Giulia 1AC Brancaccio et al. 25, PhD, Assistant Professor, Stern School of Business, New York University. Research Fellow, Business, NBER. Research Affiliate, CEPR; Dr. Myrto Kalouptsidi, PhD, Professor, International Economics, Harvard University; Dr. Theodore Papageorgiou, PhD, Professor, Economics, Boston College, "Investment in Infrastructure and Trade: The Case of Ports," NBER, Working Paper No. 32503, October 2025, pg. 2-65.

Transportation infrastructure is vital for the smooth functioning of international trade. Ports are a crucial gateway to this system: with more than 80% of trade carried by ships, they shape trade costs, and it is critical that they operate efficiently. Yet ports are susceptible to disruptions, causing costly delays. With enormous budgets spent on infrastructure to alleviate these costs, a key policy question emerges: in a world with high volatility, what are the returns to investing in infrastructure? To address this question, we introduce an empirical framework that combines insights from queueing theory to capture port technology, with tools from demand estimation. We use our framework, together with a collection of novel datasets, to quantify the costs of disruptions and evaluate transportation infrastructure investment. Our analysis unveils four policy-relevant messages: (i) investing in port infrastructure can lead to substantial trade and welfare gains, but only if targeted properly– in fact, net of costs, the marginal return to investment is positive at a minority of US ports; (ii) there are sizable spillovers across ports, as investing in one port can decongest a wider set of ports, suggesting that decision-making should not be decentralized to local authorities; (iii) the economies of scale arising from queuing would lead a planner to concentrate investment in large, geographically dispersed megaports; (iv) macroeconomic volatility can drastically change returns to investment.

#### Status quo trade collapse ensures global AND irreversible economic stagnation, forcing a transition away from growth.

Rogoff ’20 [Kenneth; June 4; Professor of Economics and Public Policy at Harvard University, Former Chief Economist for the IMF; The Guardian, “Deglobalisation will hurt growth everywhere,” https://www.theguardian.com/business/2020/jun/04/deglobalisation-will-hurt-growth-everywhere]

In his prescient 2001 book The End of Globalisation, the Princeton economic historian Harold James showed how an earlier era of global economic and financial integration collapsed under the pressures of unexpected events during the Great Depression of the 1930s, culminating in the second world war. Today, the Covid-19 pandemic appears to be accelerating another withdrawal from globalisation.

The current retreat began with Donald Trump’s victory in the 2016 US presidential election, which led to tariff wars between the US and China. The pandemic will likely have an even larger negative long-term impact on trade, partly because governments increasingly recognise that they need to regard public-health capacity as a national-security imperative.

Is China overtaking the US as a financial and economic power?

Jeffrey Frankel

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The risk today of a debilitating 1930s-style overshoot in deglobalisation is massive, particularly if the US-China relationship continues to fray. And it is folly to think that a chaotic, crisis-driven retreat from globalisation will not introduce more – and vastly more serious – problems.

Even the US, with its highly diversified economy, world-leading technology, and strong natural-resource base, could suffer a significant decline in real GDP as a result of deglobalisation. For smaller economies and developing countries that are unable to reach critical mass in many sectors and often lack natural resources, a breakdown in trade would reverse many decades of growth. And that is before considering the long-lasting impact of social-distancing and quarantine measures.

The late economist Alberto Alesina, a towering figure in the field of political economy, argued that for a well-governed country in the age of globalisation, small can be beautiful. But today, small countries that lack a close economic alliance with a large state or union face huge economic risks.

True, globalisation has fuelled economic inequalities among the approximately one billion people who live in advanced economies. Trade competition has hammered low-wage workers in some sectors, even while making goods less expensive for everyone. Financial globalisation has arguably had an even larger effect by increasing the profits of multinational corporations and offering new high-return foreign-investment instruments for the wealthy, especially since 1980.

In his 2014 bestseller Capital in the Twenty-First Century, Thomas Piketty cited rising income and wealth inequalities as evidence that capitalism has failed. But whom has it failed? Outside of the advanced economies – where 86% of the world’s population lives – global capitalism has lifted billions of people out of desperate poverty. Surely, therefore, an overshoot in deglobalisation risks hurting far more people than it helps.

To be sure, the current model of globalisation needs adjusting, particularly by greatly strengthening the social safety net in advanced economies and – to the extent possible – in emerging markets, too. But building resilience does not mean tearing down the entire system and starting over again.

The US has more to lose from deglobalisation than some of its politicians, on both the right and the left, seem to realise. For starters, the global trading system is part of a compact whereby the US gets to be the hegemon in a world where most countries, including China, have a stake in making the international order work.

Aside from its political ramifications, deglobalization also poses economic risks to America. In particular, many of the benign factors that today allow the US government and American corporations to borrow vastly more than any other country are likely tied to the dollar’s role at the centre of the system. And a wide array of economic models show that as tariffs and trade frictions increase, financial globalisation decreases at least proportionately. This not only implies a sharp fall in both multinationals’ profits and stock-market wealth (which is probably fine with some), but also could mean a significant drop in foreign demand for US debt.

That would hardly be ideal at a time when the US needs to borrow massively in order to preserve social, economic, and political stability. Just as globalisation has been a major driver of today’s low inflation and interest rates, shifting the process into reverse could eventually push prices and rates in the other direction, especially given what appears to be a lasting adverse supply shock from Covid-19.

#### Their ev agrees. Blue

Sean 1AC Sturm & Dr. Michael A. Peters 24, MA, International Relations, International Islamic of University Islamabad; PhD, Professor, Faculty of Education, Beijing Normal University. Emeritus Professor, University of Illinois, Urbana–Champaign, "The Emerging International Order: Debating Polarity in Global Politics," PESA Agora, 2024, https://pesaagora.com/columns/the-emerging-international-order-debating-polarity-in-global-politics/. [language edited; initials inserted for clarity]

SS: 6: What are the potential consequences of maintaining or attempting to shift the existing polar structure of global politics?

MP: Maintaining or attempting to shift the existing polar structure of global politics can have a range of potential consequences, both intended and unintended, which can affect global stability, economic growth and the lives of ordinary people. A polar structure can lead to heightened tensions and competition between major powers, potentially escalating into proxy conflicts or direct confrontations. This can increase the risk of military conflicts and nuclear brink~~man~~ship, endangering global security. The current structure may lead to a decline in multilateralism and the weakening of international institutions, making it harder to address global challenges such as climate change, pandemics and international security threats through collective action. The polar structure can result in economic blocs and trade barriers, leading to economic fragmentation and reducing global trade and investment flows. This can hinder economic growth and development, especially for smaller and less powerful countries. As major powers compete in technology and strategic capabilities, there is a risk of technological arms races and the development of new weapons systems that could increase the risk of accidental escalation and the spread of nuclear weapons. The promotion of different ideological systems can lead to polarisation and a lack of dialogue between countries, making it difficult to find common ground on issues of mutual concern. The polar structure can influence social and cultural dynamics, leading to the spread of nationalistic and xenophobic sentiments. This can negatively impact migrant and minority communities and lead to social divisions within countries. Developing countries can find themselves caught between major power rivalries, making it harder for them to determine their own political and economic futures. They may also face reduced assistance and increased conditionalities from major powers. The polar structure may hinder global cooperation on environmental issues, leading to a lack of effective action on climate change and other environmental challenges that require collective effort. The structure can impede effective global health responses to pandemics and other health crises, as national interests may be prioritised over a collective approach to health security. Countries may engage in diplomatic and soft power battles to shape international norms and narratives, which can lead to a more nuanced and subtle form of competition that still has significant implications for global politics. The consequences of maintaining or shifting the polar structure of global politics are not deterministic and can be influenced by a wide range of factors, including the actions of individual countries, international events and the emergence of new global issues. Efforts to address these consequences and promote a more cooperative and stable international order are ongoing, involving diplomatic negotiations, international cooperation and the development of new norms and institutions. Many countries walk the line between not offending the US and trading with China, like NZ as a traditional ally, but diplomacy has limits, and regional conflicts are likely to persist at the margins, especially for those states like Myanmar and Tajikistan that are not well integrated into either the global market economy or regional security networks. We will have to remember that the US has approximately 750 bases worldwide and an annual military budget of nearly $800 billion. While AI, satellite surveillance and drone warfare are changing the shape of modern conflict, the notion of control of territories still has a dominant place in geopolitics, and, ultimately, it is an international system that is backed by military force, whether it be border protection, control of the sea, peacekeeping or enforcement of sanctions.

#### Contagion ripples through every sector, ensuring cycles of stagnation.

O’Neil ’21 [Shannon; January/February 2021; PhD in government from Harvard University, MA in International Relations from Yale University, BA from Yale University, Vice President, Deputy Director of Studies, and Nelson and David Rockefeller Senior Fellow for Latin America Studies at the Council on Foreign Relations; Foreign Affairs, “Protection Without Protectionism: Getting Industrial Policy Right,” https://www.foreignaffairs.com/articles/united-states/2020-12-08/protection-without-protectionism]

THE PITFALLS OF PROTECTIONISM

History, however, provides many examples of industrial policy gone wrong. Supposedly temporary protections for infant industries or struggling economic sectors often become permanent, encouraging the development of monopolies or oligopolies. Over time, such measures, as impede national competitiveness protected corporations and sectors are less inclined to innovate. Governments are rarely wise or nimble enough to figure out the right amount of protection.

Latin America’s experience in the postwar period highlights these potential downsides. Several countries introduced a mix of tariffs, quotas, licenses, industrial subsidies, and credits to spur domestic manufacturing. There were initial economic gains: GDP surged ahead in many countries, as did local manufacturing of steel, chemicals, cars, and all sorts of consumer goods. In Brazil, the aerospace corporation Embraer made inroads into the international jet market, and the mining company Vale became one of the world’s biggest miners of iron ore. In Mexico, lucrative government contracts and control of the domestic retail cement market helped fund the building materials company Cemex’s successful global expansion. But more often, governments weren’t particularly good at choosing winners and were even worse at weeding out unproductive but politically connected companies. Indigenous innovation stalled, as monopolies and oligopolies captured the benefits of government protections and created a bevy of multimillionaires and billionaires. Consumers paid higher prices for inferior goods, and taxpayers shouldered the burden as country after country faced public debt crises and economic stagnation.

#### It crashes U.S. global influence---that enables alternatives to emerge.

Moyer ’18 [Jonathan; March 12; Assistant Professor at the Josef Korbel School of International Studies at the University of Denver and Director of the Frederick S. Pardee Center for International Futures, and Dr. David K. Bohl, Research Associate at the Frederick S. Pardee Center for International Futures at the Josef Korbel School of International Studies at the University of Denver; Monkey Cage, “Why Trump’s Tariffs Could Weaken U.S. Influence in the World,” <https://www.washingtonpost.com/news/monkey-cage/wp/2018/03/12/heres-how-protective-tariffs-trade-away-u-s-global-influence/>]

Our research looks at geopolitical risks associated with trade conflict as well as the wider effect of trade on countries’ global influence. In this light, U.S. trade protectionism — and the threat of trade wars — hurts global commerce, but also potentially reduces U.S. foreign policy influence.

Europe is pushing back against Trump’s steel and aluminum tariffs. Here’s how.

There are economic trade-offs to consider

Trade protectionism has distinct economic and political effects. Within countries, protecting an economic sector from foreign competition can increase domestic demand and theoretically grow jobs within the protected sector. But there are trade-offs, as protectionism increases costs for other sectors and leads to a decrease in hiring elsewhere.

At the national level, trade protectionism reduces long-term economic growth, increases prices and inflation (harming domestic investment), and potentially drives up the value of the dollar (hurting U.S. exports).

Internationally, protectionist policies trigger a variety of responses. When Trump announced the new tariffs a week ago, the European Union reacted caustically, Canada expressed surprise and China voiced concern.

And many analysts argued that U.S. protectionism ultimately lets China, a global trade giant, expand its influence. Many analysts agreed that the U.S. withdrawal from the Transpacific Partnership led to a diminution of broader U.S. foreign policy influence. Yet much of the discussion about the relationship between shifts in international trade and influence is anecdotal.

Okay, the Trans-Pacific Partnership is dead. What was it?

There’s a new way to measure U.S. influence abroad

Our research provides new assessments of such shifts in influence. First, a new report published by the Atlantic Council, Pardee Center for International Futures and the Hague Center for Strategic Studies has introduced a new measure called the Formal Bilateral Influence Capacity (FBIC).

The FBIC attempts to capture the relational bandwidth and dependence across all pairs of countries across time. We measure the level and relative balance of economic, political and security interactions. For example, if a country like Israel is highly dependent on U.S. military sales for its security infrastructure, the United States is able to exert influence. Or if trade from China represents a large portion of another country’s economic activities — say Burma — China can exert influence.

This new approach can’t measure the actual influence of one country on another — that would be impossible to capture systematically. Instead, the FBIC research creates a replicable framework for thinking about how one country can leverage its economic, political and security relationships to influence behavior in another.

The data show a decline in U.S. global reach

A second study has used these data to model the geopolitical risks of increased protectionism. This research shows dramatic changes to the international system since the end of the Cold War, with the Chinese network of influence increasing to include many countries in East and Southeast Asia as well as in Africa.

The U.S.-led networks of influence remain primarily in the Western hemisphere and include strategic allies in both the Middle East — think Saudi Arabia and Israel — and East and Southeast Asia — such as Japan and South Korea.

The FBIC show that in 2015, the United States had more influence over 115 countries compared with China, which had more influence over 71 countries. This is simply a direct comparison of the influence of China and the United States and not a statement of whether either was the largest foreign influence in a specific country.

What happens when we project these numbers into the future? In a baseline scenario to 2025 that assumes moderate increases in international trade, China’s sphere of influence expands to include more countries in Asia and Africa. While the United States retains much of its network of influence, including countries in East and Southeast Asia, it is projected to lose its edge over China in terms of bilateral influence in five countries by 2025.

Should the U.S. only give foreign aid to its friends? Well, define ‘friends.’

However, in a scenario in which the United States imposes tariffs on incoming goods and services (a broader protectionist scenario than the one being enacted by Trump, but one that could arise if trade conflicts escalate), the future sphere of U.S. influence in Asia diminishes much more rapidly. In a scenario with increasing U.S. economic protectionism, China surpasses U.S. influence in an additional 22 countries. There is an added concern as this list includes Indonesia, Nigeria, Pakistan and Thailand — countries that are strategically important to the United States.

In short, while the United States is gradually losing international political ground to China, the pace of shifting international influence will depend in part on U.S. trade policy. In this light, Trump’s tariffs risk trading away U.S. influence faster than it might otherwise diminish.

#### Global autarky is feasible.

Das ’16 [Satyajit; 2016; Former Australian Banker and Corporate Treasurer, Columnist and Financial Times Opinion Writer; A Banquet of Consequences: The Reality of our Unusually Uncertain Economic Future, “Circling the Wagons: Globalization in Reverse,” Ch. 6]

Nations may take poet Robert Frost’s advice that good fences make good neighbours. The US, Europe and China are all likely to find autarky a realistic policy option, although for different reasons.

Structurally, the US could function successfully as a closed economy. It remains the world’s largest economy, with around 25 percent of global GDP, and is almost twice the size of China, the second-largest economy. With its large domestic market, America is less exposed to trade (around 15 percent of GDP) than other big economies. If trading with Canada and Mexico under the North American Free Trade Agreement (NAFTA) is excluded, then the reliance is even lower. Despite the inequality in its distribution of income, America remains relatively wealthy, with per capita GDP of around US$50,000. This is amongst the highest in the world, especially when low-population countries (such as Luxembourg, San Marino or Singapore) or those that are commodity-rich (Middle East oil producers) are excluded. In comparison, China’s GDP per capita is around US$5000–6000. While it’s highly concentrated amongst the affluent, the total net worth of American households is substantial, in excess of US$70 trillion, although this is down from a peak of over US$80 trillion before the GFC.

The US remains a major producer and net exporter of food, controlling almost half the world’s grain exports. It is also rich in mineral resources. New technology has enabled access to oil and natural gas formations that were previously inaccessible. Increased production of shale gas and oil has allowed the US to reduce imports, decreasing its US$600 billion trade deficit and reliance on foreign suppliers. Lower energy costs have seen American manufacturing output increase by 3 percent between 2006 and 2014, and exports increase by 6 percent. Until the 2015 fall in oil prices, shale gas and oil projects also increased investment by 10 percent and jobs by 2 percent. While US energy independence is not likely in the near term, and the benefits from shale gas are overstated, increased domestic production provides America with a significant advantage in the form of competitive fuel and power costs.

With no clear replacement available, the US dollar is likely to continue as the world’s reserve currency, with a dominant share of global trade and investments. The US borrows in its own currency, benefiting from a ready market for its securities, both domestically and internationally. Over US$6 trillion of Treasury bonds are held by foreign investors, mainly in China, Japan, elsewhere in Asia, and the Middle East. The US has favourable demographics. It has a higher rate of population growth than other industrialised countries, which have below-replacement fertility rates. It has higher levels of immigration, remaining a magnet for foreigners and thus attracting talent and labour.

But the US also faces significant challenges. Its economic model, based on housing and consumption financed by borrowing, is broken. Growth, at around 2–3 percent, while above that for most developed countries, is well below potential. It is narrowly based, continuing to rely on consumers taking out more car and student loans, business investments in equipment and software, and residential construction. Unemployment remains higher than at equivalent stages of previous recoveries from a recession. If discouraged workers who have left the workforce and those working part-time because of the lack of full-time jobs are included, then the unemployment rate is well over 10 percent. The US economy also has an overhang of high levels of government and consumer borrowings.

A retreat from globalisation is central to dealing with America’s economic issues, irrespective of its effect on other nations. Low interest rates reduce the cost of servicing debt, allowing high levels of borrowing to be sustained in the short term. Low rates and QE measures help devalue the US dollar, reducing the level of government debt, by decreasing its value in foreign currency terms. A weaker US dollar boosts exports, which are assisted by cheaper prices and by American dominance of key industries, such as technology and software, pharmaceuticals, complex manufactured products (in aerospace, defence hardware, heavy machinery), entertainment and services. A weaker dollar also reduces the cost base of domestic production, encouraging the return of manufacturing and assembly work to the US, which should in turn reduce unemployment. Stronger growth and lower unemployment will assist in reducing the large US budget deficit, helping control government debt levels.

#### Crisis causes a shift to autarky.

Milanovic ’20 [Branko; March 19; Senior Scholar at the Stone Center on Socio-Economic Inequality at the CUNY Graduate Center and Centennial Professor at the London School of Economics; Foreign Affairs, “The Real Pandemic Danger Is Social Collapse,” https://www.foreignaffairs.com/articles/2020-03-19/real-pandemic-danger-social-collapse]

But if the crisis continues, globalization could unravel. The longer the crisis lasts, and the longer obstacles to the free flow of people, goods, and capital are in place, the more that state of affairs will come to seem normal. Special interests will form to sustain it, and the continuing fear of another epidemic may motivate calls for national self-sufficiency. In this sense, economic interests and legitimate health worries could dovetail. Even a seemingly small requirement—for instance, that everyone who enters a country needs to present, in addition to a passport and a visa, a health certificate—would constitute an obstacle to the return to the old globalized way, given how many millions of people would normally travel.

That process of unraveling might be, in its essence, similar to the unraveling of the global ecumene that happened with the disintegration of the Western Roman Empire into a multitude of self-sufficient demesnes between the fourth and the sixth centuries. In the resulting economy, trade was used simply to exchange surplus goods for other types of surplus produced by other demesnes, rather than to spur specialized production for an unknown buyer. As F. W. Walbank wrote in The Decline of the Roman Empire in the West, “Over the whole [disintegrating] Empire there was a gradual reversion to small-scale, hand-to-mouth craftsmanship, producing for the local market and for specific orders in the vicinity.”

In the current crisis, people who have not become fully specialized enjoy an advantage. If you can produce your own food, if you do not depend on publicly provided electricity or water, you are not only safe from disruptions that may arise in food supply chains or the provision of electricity and water; you are also safer from getting infected, because you do not depend on food prepared by somebody else who may be infected, nor do you need repair people, who may also be infected, to come fix anything at your home. The less you need others, the safer and better off you are. Everything that used to be an advantage in a heavily specialized economy now becomes a disadvantage, and the reverse.

The movement to natural economy would be driven not by ordinary economic pressures but by much more fundamental concerns, namely, epidemic disease and the fear of death. Therefore, standard economic measures can only be palliative in nature: they can (and should) provide protection to people who lose their jobs and have nothing to fall back on and who frequently lack even health insurance. As such people become unable to pay their bills, they will create cascading shocks, from housing evictions to banking crises.

#### Debt accumulation causes a fiscal crisis---herd dynamics amplify the risk.

Boccia ’23 [Romina; May 22; MA economics, director of budget and entitlement policy at the Cato Institute; Cato Institute, “From Debt Ceiling Crisis to Debt Crisis,” https://www.cato.org/blog/debt-ceiling-crisis-debt-crisis]

Why might a U.S. debt crisis come on suddenly instead of building over time?

Burman et al. contrast rising debt leading to higher interest rates, which could be a disciplining force for Congress, with debt accumulation as interest rates stay low, which could encourage further fiscal profligacy until gradual corrections are no longer possible. They write:

“A far worse situation would be for interest rates to stay low while we accumulate unprecedented amounts of debt only to respond very suddenly when financial markets or foreign lenders decide that the United States is no longer a good credit risk. That could produce a catastrophic financial meltdown, like the Great Recession, which was triggered by the housing bubble bursting, but with one crucial difference. If the crisis is caused by an excessive amount of government debt, the government will not be able to borrow to deal with its effects. This would be a catastrophic budget failure.”

Like recent banking crises, a U.S. debt crisis could arise suddenly because of how financial markets respond to revised information and changing economic and political conditions. Certain economic models, such as herd models and winner-take-all models, suggest that when investors suddenly doubt the government’s ability to pay back its debts, they may rush to sell U.S. bonds all at once. Such a sudden surge in sales could lead to a rapid rise in interest rates, making it more expensive for the government to borrow and potentially triggering a broader financial panic.

#### Investors will jump ship when debt grows too high---resulting in a cash crunch that destroys the economy.

Bourne ’24 [Ryan; April 18; MPhil economics, Chair for the Public Understanding of Economics at Cato; Cato Institute, “A Case for Federal Deficit Reduction,” https://www.cato.org/policy-analysis/case-federal-deficit-reduction-spending-cuts-avoid-fiscal-crisis]

1. As Insurance against an Acute Fiscal Crisis

One rationale for reducing deficits today would be to reduce the risk of an acute fiscal crisis, which could cause financial and economic chaos. If investors were to lose confidence in the federal government’s ability to repay its debts, they would demand sharply higher interest rates to lend it money or even stop lending altogether. This could lead to a devastating financial crunch, given that the government relies heavily on borrowing to finance its ongoing operations.

A sharp, large surge in bond yields would feed directly into a higher deficit, with extra borrowing then driving up yields further in a so-called fiscal doom loop. Eroding investor confidence, heightened macroeconomic uncertainty, and a growing sense that the government might eventually lean on the Federal Reserve to print new money to fund the government (risking higher inflation) would result in steep declines in the dollar as money flees from dollar-denominated assets.21 Higher interest rates would squeeze private sector investment and would cause financial turmoil by wreaking unexpected havoc with asset values. The federal government would find it very difficult to finance its core obligations, and the only way to avoid leaning on the Fed to print money would entail rapidly closing deficits with deep austerity cuts to government spending, large tax increases, or both.

A fiscal crisis thus inevitably ends with some combination of a default, sharp and painful austerity, or high inflation. Politicians are always in the market for votes, so we can expect them to—striking a populist pose—try to saddle wealthy creditors with shouldering much of the cost of deficit reduction and try to insulate people dependent on government programs from any spending cuts. That’s why it would be tempting to formally default on outstanding debt, or to have the Fed “monetize” some of it, creating new money to buy US Treasuries directly or indirectly from the market, thus effectively financing the government’s deficit by increasing the money supply. This would produce a sudden burst of unexpected inflation that transfers wealth from Treasury note holders to those who benefit from government spending. But even such monetization offers only a temporary reprieve. Investors would demand higher interest rates if they expected higher inflation.

Mercifully, markets have not yet concluded that the US federal government is insolvent and that such drastic measures are likely. Bond yields remain elevated and debt auctions have seen weaker demand for government debt, forcing the government to pay higher rates to borrow.22 But yields are not surging to the sorts of extreme levels they did in Greece (up to 29 percent) during that country’s fiscal crisis that began in late 2009.23 Nor indeed, as Figure 1 showed, do we see higher inflation expectations that would signify investors expect the Federal Reserve to start monetizing debt.

Fiscal crises are inherently unpredictable. Greece was able to borrow relatively cheaply until suddenly it wasn’t.

The problem, though, is that fiscal crises are inherently unpredictable. Greece was able to borrow relatively cheaply until suddenly it wasn’t (Figure 7). There, the trigger for the crisis was the newly elected government’s revelation that in 2009 the country was running a mammoth deficit of almost 12.5 percent of GDP, much higher than the previous government had estimated.24 That shifted perceptions about the country’s fiscal sustainability and creditworthiness, leading to its 10-year bond yield jumping from 6.5 percent to 29.2 percent within two years. This was a precursor to a severe dose of enforced austerity alongside three international bailouts.

The fiscal situation in the United States is not like the one in Greece. Our bookkeeping is more honest and with a sovereign central bank, the country can always meet its nominal debt obligations in its own currency by printing money (though relying on the Fed to acquiesce would undermine central bank independence). But we do have bad debt dynamics and a political class seemingly unbothered by the flow of red ink. That brings with it a risk of changing investor sentiment.

Fitch downgraded US debt from AAA to AA+ in August 2023, citing an anticipated “fiscal deterioration,” escalating “general government debt burden,” and “the erosion of governance” (read: fiscal irresponsibility). Since then, the federal deficit has risen further and Congress has had a government-shutdown standoff. Meanwhile, the unbridled escalation of debt to come due to Social Security and Medicare expenditures has not been much featured in the presidential election discourse, in which the likely two major candidates—President Biden and former president Donald Trump—have both shown a penchant for high borrowing while in office. Unlike most Organisation for Economic Co-operation and Development countries, the United States has no medium-term fiscal rules in place for the deficit or debt to shape ongoing budgeting decisions. Moody’s explained its own decision to downgrade the outlook for US debt by saying that “continued political polarization in Congress raises the risk that lawmakers will not be able to reach consensus on a fiscal plan to slow the decline in debt affordability.”25

What’s more, on unchanged policies, some form of default is inevitable at some stage. Penn Wharton modelers estimate that the United States has two decades to stabilize the national debt relative to GDP.26 After this, no combination of tax hikes or spending cuts can prevent a formal default or an implicit default (i.e., with the Federal Reserve monetizing debt by creating new money to buy government bonds). Higher borrowing costs, of course, bring this date forward. And such a default would have profound consequences. A recent working paper by economists Jason Choi, Duong Q. Dang, Rishabh Kirpalani, and Diego J. Perez has estimated that the “exorbitant privilege the US holds in global safe asset markets” significantly increases the capacity for the country to take on new debt.27

A fiscal crisis is therefore a meaningful risk and one to which policymakers pay insufficient heed. All that is really needed for it is a trigger. A war, another pandemic, a financial crisis, or a major recession could precipitate another huge wave of debt, prompting investors to fundamentally reassess their prospects of being repaid.

My colleague Romina Boccia has written persuasively that, given the US Treasury market has been regarded as a “safe haven” and the dollar has global reserve-currency status, interest rates might not even provide a gradual warning about changing sentiment.28 The risks are also potentially greater that a fiscal crisis in the United States could precipitate a national or international banking crisis and a so-called sudden stop, where the United States experiences a rapid reversal of capital flows. Sovereign debt crises, as economist Arnold Kling has written, seem unlikely until they happen after investor confidence shifts:

### Growth---Impact---2NC

#### A convergence of planetary risks---atmospheric breakdown, resource crunch, land obstruction, and surging security crises---are each inevitable AND cascade to extinction under growth.

Scheffran ’25 [Jurgen; February 25; Professor of Integrative Geography at the University of Hamburg; Towards Rethinking Politics, Policy, and Polity in the Anthropocene, “Planetary Boundaries, Polycrisis and Politics in the Anthropocene: Climate Pathways, Tipping Cascades and Transition to Sustainable Peace in Integrative Geography,” Ch. 8]

The scientific debate reached a new level with the Club of Rome’s report The Limits to Growth (Meadows et al. 1972), which used a computer-based world model, represented by linear dynamic equations and available data, to simulate the future of the planet from 1900 to 2100. The interplay of five basic growing factors (world population, food production, natural resources, industrial production and pollution) was mapped in 12 different scenarios. If the growth trends continued unchanged, the planetary limits to growth would be reached within the next 100 years, likely resulting in a sudden and uncontrollable decline in both population and industrial capacity in the wake of natural resource depletion and environmental pollution. Such a collapse could be avoided by altering the growth trends and establishing a global equilibrium designed through resource efficiency, environmental protection and limits to growth that is ecologically and economically stable and sustainable far into the future, so that the basic material needs of each person on Earth are satisfied and each person has an equal opportunity to realise a certain human development potential. Which of these scenarios is realised is defined by decisions of the world’s people to strive for the second outcome rather than the first, the sooner they begin working to attain it, the greater will be their chances of success.

Notwithstanding the simple model structure, which ignored environmental changes like global warming and socio-political processes like conflict and cooperation, the Club of Rome report, reinforced by the oil crisis and other crises in the 1970s, unleashed a wave of interest and prompted the U.S. government under Jimmy Carter to produce the Global 2000 report published in 1980 which in great detail described the destabilising effects of environmental degradation and population growth (CEQ 1980). As a result, political efforts increased to reduce oil dependence through alternative energy sources, environmental agreements such as the Montreal Protocol, and the 1987 Brundtland Report on Sustainable Development.

After the end of the Cold War, the situation initially relaxed: the former adversaries disarmedFootnote3, and many hoped for a peace dividend that would also benefit environmental protection and security conceptions to include ecological dimensions. The door was opened for the UN Rio Conference of 1992, which put climate and biodiversity on the agenda and laid down guidelines for sustainable development in Agenda 21, which in 2016 led to the Sustainable Development Goals (SDGs) under the 2030 Agenda for Sustainable Development. War and peace did not play a role at the Rio Summit despite attempts to suggest conversion of military budgets, infrastructures and resources for civilian purposes (UN 1991; Scheffran 1992).

While the Club of Rome report was criticized for its simplistic assumptions, it did not predict one future but project a wide range of possible futures. Despite hopes that the worst scenarios of could be avoided, globalisation accelerated the pace of worldwide trade, development and CO2 emissions. By the end of this century, up to 12 billion people are expected to live on earth, many in poverty. The largest increase will be in countries of the global South (most particularly in Africa), where more than 80% of all people live. Without sustainable development this population growth will increasingly conflict with the earth’s resources and endanger the natural foundations of life, particularly evident in pressures such as climate change and biodiversity loss, which were not yet a factor in the original Club of Rome report. The latest update expects a decline in growth rates of the world population and of wealth in the coming decades (Dixson-Declève et al. 2022). A transition to degrowth would require a radical change in the financial, economic, political and social system and a reorganization of the flow and usage of resources as well as the indicators of wellbeing, prosperity and innovation (Hickel et al. 2022).

8.4.4 Resource Limits and Planetary Boundaries

Since the availability and use of natural resources is an essential precondition of human existence, their depletion and scarcity is a threat to human livelihood and a potential source of conflict, making the protection of natural resources necessary for a sustainable human-nature relationship. The distribution and scarcity of resources is intertwined with socio-economic and geopolitical dynamics that exacerbate inequality and conflict as much as environmental degradation and climate change. From the perspective of political ecology and integrative geography, there are significant differences for different resource types and their material and energy flows. Non-renewable resources (minerals, metals, rocks, sand, and fossil fuels) were created over long geological periods but are depleted over short geological periods. In contrast, inanimate (water, air, wind, sun, soils) and animate renewable resources (biodiversity, genetic resources, bioenergy, cereals, grasses, forests, fish, meat, wool, etc.) allow steady flows within limits.

Climate and environmental change affect the nexus of water, food and energy security which is essential for human livelihoods. While the exploitation of non-renewable resources such as minerals and fossil fuels is polluting the environment and reaching planetary boundaries, the challenge is to integrate resource flows of energy, matter and information into natural cycles through recycling and the shift to renewable resources. The limited range of material transport favours regional production of material goods while electricity-generating forms of energy through power grids allow for transcontinental networking and cooperation (for example between Europe and North Africa across the Mediterranean). Diffusion processes expand the border-crossing propagation and exchange of resources in space and time, which is shaping complex geographic resource landscapes. The total area of fertile arable land is declining, as well as the extent of forests and the number of species living in them. Without fundamental change, natural resources would be depleted, ecosystems overstressed and the climate significantly altered.

With its growing impact on nature, humanity is increasingly competing with other species and endangering their regenerative capacity by consumption and transformation of natural resources (input side), pollution by release of waste materials and waste heat into nature (output side); and the modification of the functioning of ecological systems (systemic destabilisation). Since organisms, ecosystems and societies have viable tolerance ranges within which they are capable of adapting and keeping damage in ‘acceptable limits’ and outside of which qualitatively different state occurs. Whether for better or worse, who is the winner or loser, also depends on the value criteria chosen. The growing human footprint leads to irreversible destruction of species, ecosystems and habitats, affects natural livelihoods and the coexistence of nature and society, degrades water, forests, soils and arable land, provokes climate change and species loss, overfishing of the oceans and the overexploitation of strategic raw materials. Natural resources become scarce through declining quality and quantity, caused by exploitation, waste, modifications of regenerative capacity or uneven distribution. Local and short-term changes usually have a more direct impact than global and long-term phenomena.

Planetary boundaries specify ecological stress limits of the Earth that endanger ecosystem stability and human livelihoods, and define a “safe operating space” that must be guaranteed in order to maintain security, resilience and sustainability (Rockström et al. 2009; Steffen et al. 2018). Certain thresholds and tipping elements must not be exceeded or undercut, triggering abrupt and irreversible changes that endanger global stability (Kim/Kotze 2021). Due to uncertainties in complex systems, however, these thresholds cannot be precisely determined, so that safety margins may be considered allowing time for action before a planetary boundary is exceeded. When a ‘dangerous zone’ is reached, the risk increases as the boundary is crossed. Nine earth system boundaries (ESBs) have been proposed in the dimensions of climate change, stratospheric ozone depletion, atmospheric aerosol loading, biogeochemical cycles, land-use change, biosphere integrity, novel substances, freshwater consumption and ocean acidification (ibid.), with limits not yet exceeded in the last two dimensions. A quantitative assessment finds that seven of eight globally quantified safe and just ESBs and at least two regional safe and just ESBs in over half of global land area are already exceeded (Rockström et al. 2023).

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8.4.5 Socio-economic and Political Boundaries and Crises Limits to growth do not only apply to environmental planetary boundaries but also to economic, social and political limits and boundaries which prevent further expansion on established pathways which are becoming too costly and too risky, triggering multiple crises (Scheffran 2020a, 2021, 2023a, b). The question is what limits of the previous growth-oriented and expansionist development model may have been reached? Or can the principle of expansion across borders be continued? These questions will be discussed for various dimensions of limits, contradictions and crises which are subject to uncertainty. Attitudes towards nature also have a significant influence on its economic use, serving as a source of resources and a sink for waste. For a long time, nature played a subordinate role in economic theory; natural resources seemed to be available without constraints, ignoring that they are finite and essential for the functioning of the economy (Murphy 2022). The capitalist economy continues to rely on growth and aims to conquer global markets with new products. It contains growth- and power-promoting feedbacks: Consumers with higher incomes have more leverage to secure their income advantage; companies and transnational corporations with high profits have more resources to invest in new means of production. The accumulation of capital, which is part of the market economy, corresponds to the principles of exponential growth and the concentration of power, which is based on the ownership of wealth and means of production and influences political decisions. Accordingly, processes of concentration occur in economic competition, in which the strongest have the best chances. The globalisation of the Western growth model thus contributes to the accumulation of wealth and power. This reinforces the unjust gap between rich and poor as well as the unsustainable exploitation of nature. Falling costs and wages and the technical substitution of labour exclude large parts of the world’s population from prosperity and drive entire regions into marginalisation. Lack of capital, debt and competitive pressures are blocking development in many countries of the Global South. In the globalised and interconnected world, the financial system is becoming increasingly dominant, rendering political control and governance mechanisms ineffective (Sachs 2020). Huge investment flows in digital worlds find no counterpart in material production or population needs. This became evident in the financial and banking crisis of 2008, with its manifold after-effects such as the Greek crisis or the price fluctuations that contributed to the Arabic Spring. Never before has so much wealth been produced; the social market economy as well as globalisation have brought prosperity to many people. However, a large part of humanity cannot share the fruits of wealth, is unemployed and excluded or falls through the ‘social net’. The gap between rich and poor, winners and losers, North and South is growing. A vicious circle of personal problems and social decline develops. Especially in poor countries, many people suffer from a bundle of interwoven problems: Hunger, poverty, lack of resources and environmental destruction, diseases and epidemics, repression and violence. Precarious living conditions and social problems promote uprooting and displacement of large populations. More and more people from poor rural regions are migrating to expanding megacities, where some find work and others contribute to worsening economic, environmental and social problems. Tens of millions of people are displaced each year by violent conflict and natural disasters. In the 2015 refugee crisis, hundreds of thousands migrated to the centre of Europe. Industrialised countries are also affected by social disintegration and loss of control, including crime, violence, terrorism, drugs, diseases, social and political fragmentation. Increasing ‘social disorder’ endangers internal peace and the social structures that secure individual existence and strengthen social cohesion. Social cuts shift the limits of growth to the periphery of society, and the strongest have the best chances to survive. Violence is both a cause and a consequence of the other problem areas and acts like a disaster amplifier. Thus, ecological and social structures that are supposed to protect individuals and strengthen social cohesion are disintegrating. Expansive globalisation is reaching limits associated with a fragmentation and disintegration of society, represented by demarcations and a dismantling of social structures, which shifts problems and conflicts to social peripheries. The challenge is whether social structures are strong enough to mitigate and preserve peace against the tipping dynamics of growth, power and violence. In November 1990, the “Charter of Paris for a New Europe” – supported by thirty European states, the USA and Canada – sealed the end of the bloc confrontation between East and West after four decades of the Cold War and was supposed to open opportunities for a pan-European peace order and a cooperative security system. However, hopes for a peace dividend have not been fulfilled and the opportunities were missed. Immediately after the end of the Cold War, international stability was undermined by new conflicts, including the Gulf and Balkan wars in the 1990s, the Afghanistan and Iraq wars in the wake of September 11, 2001, as well as the interconnected conflict landscapes of the 2010s, notably the ‘Arabic Spring’ and the wars in Syria and Ukraine. The refugee crisis of 2015 and terrorist attacks, the disintegration and isolationist tendencies of the EU and the West, autocratic governments and nationalist populist movements all had knock-on effects in interconnected crisis dynamics and chain reactions that reinforce each other and drive the world into chaos (Scheffran 2008, 2016). Globalisation out of control puts states under pressure, creates violence and conflict, and provokes resistance in civil society and governments. In addition, climate and environmental changes are connecting with other crises. In 2010/11, for example, natural disasters in the wheat belts of China and Russia contributed to price increases in international food markets and triggered further chains of responses. At the same time, countervailing powers such as China, India, and Russia gained influence, as did environmental and climate movements and other civil society activities that challenged fossil capitalism’s economic and lifestyle practices based on resource exploitation and natural stress. Critics come into conflict with political power relations and take high personal risks, as the examples of whistle-blowers like Edward Snowden or Julian Assange show. Thus, the liberal world order is coming under pressure from all sides, showing destabilising tendencies and conflicts both internally and externally. The current situation seems more dangerous than ever. The question is what security systems can hold in the face of this situation and prove capable of sustaining peace? 8.4.6 Ambivalence of Science and Technology Between Force Multiplier and Growth Limits The degree to which humans can control and manipulate nature is strongly affected by science and technology which multiply abilities to act upon and control natural processes. Technical innovations can increase adverse human impacts on nature, even lead to technical disasters such as reactor accidents, dam bursts, aircraft crashes or chemical disasters, but also diminish risks through safety mechanisms or resource needs through sustainable and low-carbon energy systems. Landscapes are shaped and transformed by technology, such as built environments in urban areas, transportation networks and energy landscapes. As large distances can be overcome in short time by transportation and communication systems, geographical spaces are shrinking, accelerating the exchange across boundaries and transforming the human-nature interspace. Technology transfer enables the flow of technological capacity across borders and accelerates technology development in regions without access, overcoming large regional differences. Science and technology play an ambivalent role, creating opportunities for problem solving as well as problem exacerbation (Scheffran 2018a). They have a share in the growth dynamic, as science strives to explore unknown territories in the world of knowledge, while technical innovations provide the means to ‘conquer’ the real world, changing it constructively or destructively. Thus, they can ease the hardships of human existence and allow more people to have a decent life and avoiding limits to growth and scarcity. At the same time, technical means have increased human impact on the natural world which threatens the living conditions. Thus, the power of scientific knowledge itself has limits and contributes to them (Lüthje et al. 2011). Since science and technology expand the functions of the human body interacting with the outside world, they provide enhanced senses to perceive and understand things outside the everyday horizon of experience, and create instruments to cross borders and to intervene in more distant worlds. As more and more becomes ‘comprehensible’, science and technology develop into factors of power, for securing domination but also for overcoming it when new actors take advantage of it. Powerful technical instruments can serve as means of production, but also as destructive means, becoming involved in technology conflicts (Scheffran 2015a). In addition to more intensive exploitation of resources, acceleration of economic growth and increase in the means of violence, science and technology can be used to overcome problems. The more scientific-technical civilization becomes a problem, the greater are the temptations for technical intervention, which in turn brings new problems. This is shown by critical discourses on genetic engineering, geoengineering or artificial intelligence. In the post-factual age of fake news, scientific knowledge also comes under pressure by nurturing doubts about its truth and validity. The complexity of the constructed world increases immeasurably, making social control and political governance more difficult. Complex systems tend to surprise, react sensitively to fluctuations, make the future uncertain and open up many options, which sets limits to knowledge and makes decisions more difficult (Scheffran 2008). Experts are often called to the front when politics is stuck and needs them, mostly in crises, wars and catastrophes, less when it is a matter of avoiding the driving forces and power structures that lead to them. Provided it is in line with the interests of the population, in the long run science and technology can contribute to problem avoidance and improvement in order to secure life on earth and to change society in a sustainable way. Scientific responsibility also includes replacing the destructive exploitation of nature with constructive co-evolution of the biosphere and sociosphere that makes their respective inherent dynamics compatible. This includes the development and implementation of practical proposals for sustainable development in politics and economics, and the search for ‘alternative’ conceptions of nature and forms of traditional knowledge and alternative knowledge production. In addition to the science of inanimate nature, which like classical physics provides regularities for the development of technical innovations and mastery of nature, the sciences of animate nature (biology, ecology, social sciences) focus on complex interrelationships and social innovations that learn from nature and strive for integration with nature. This offers the chance to explore the scientific interspace and overcome the old dualism of subject and object, of body and soul, of nature and society Science and technology have been a driving force in the climate debate since its inception. Scientific measurement data and theories have been used to create computer models to simulate future scenarios, depending on plausibility assumptions about economic and societal processes and policy responses. The state of climate research is summarised in reports of the Intergovernmental Panel on Climate Change (IPCC), deriving proposals for mitigating climate change and feeding them into negotiations, such as the temperature target in the Paris Agreement. In parallel, technical instruments for emission reduction were developed for the energy, transportation and agricultural transitions, etc., but have so far been insufficiently implemented. 8.5 Complexity of Multiple Crises, Compound Risks and Tipping Cascades 8.5.1 Complexity, Security and Stability During the 1980s, complexity emerged as a new paradigm in science and politics, expressed in the ‘complexity turn’ of international relations (Urry 2005; Mesjasz 2010). A spectacular example was the fall of the Berlin Wall in 1989, which served as a tipping point for the domino-like collapse of the Soviet world system in a matter of weeks, German unification, the breakup of the Eastern Bloc and chaotic breakdown of the Cold War, becoming a tipping point to an era of ever-growing complexityFootnote4 (Jathe et al. 1995; Scheffran 2008). In the new world (dis)order, cascading chains of events emerged, including complex social interactions and self-reinforcing collective dynamics such as stock market crashes, social turmoil, mass migration and violent conflict that increasingly challenged international security and stability (Kominek/Scheffran 2012). A particular form of social instability is conflict, based in incompatible values, priorities, and actions of agents who undermine each other’s values and provoke responses, leading to the waste of resources and escalating interactions if conflicts are not resolved. A crucial issue is whether growing complexity breeds instability, a question that has been extensively discussed for ecosystems. Artificially constructed complex systems are dysfunctional if the components do not fit together, while unstable modes tend to disappear in evolving complex systems and those with better fitness or control mechanisms have higher chance of survival. Systems are often robust and adaptive against the most likely disturbances in the core region of stability (Held/Schellnhuber 2004); close to critical thresholds between regions of stability and instability small and rapid variation can lead to a systemic break down. This is symbolised by the famous butterfly effect in chaos theory, which may occur when a system is already ‘on the edge’, driven by other processes. A key term is the sensitivity of couplings between variables, which determines how changes spread through the network of interconnections (Scheffran et al. 2012c). Beyond a given sensitivity, threshold changes may trigger instabilities, tipping points and cascading sequences. To maintain stability, it is essential to understand the conditions under which micro-level events lead to qualitative changes at macro level that propagate in space and time. New and unforeseen ‘disturbances’ may endanger system stability and force it to adapt to changing conditions. Methods of non-linear dynamics describe transition phenomena, such as self-organisation or micro-macro phase transitions which often occur beyond thresholds and tipping points when the dynamics accelerates and there is a qualitative switch of behaviour. A system is stable if essential system characteristics are preserved despite disturbances. Naturally evolved systems are often adapted to environmental change, which reduces their susceptibility to disturbance. At critical thresholds of instability, small changes can trigger qualitative system change. If the system tilts, upheavals and phase transitions occur, from collapse to transformation. Examples are transitions between war and peace or the change from exploitation to sustainable use of resources.

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As described above, limits to growth and planetary boundaries drive the existing world order into multiple and complex crises. The world is at the edge of chaos where small causes have big impacts and spread across spatial and temporal scales. When everything is interconnected, changes in one part of the world propagate through systemic networks like a domino effect or chain reaction (Scheffran 2016a), accumulating in high risk hotspots.

8.5.2 Polycrisis in an Interconnected World

The more the planetary boundaries and limits to growth are reached or exceeded, the more the associated risks, crises and conflicts become relevant in different sectors. In the last decade the world has experienced multiple crises which combined in interconnected and compounding cascades, including hunger and poverty, refugees and pandemics, vulnerable supply systems and critical infrastructures, the gap between rich and poor, financial and economic crises, climate change and environmental degradation, destabilisation of social and political structures, national populism and terrorism, security risks and violent conflicts. While the primary consequences are often initially confined to affected areas or subsystems, they can spread in the globally interconnected world via long-distance effects (teleconnections) and global connectors, including globalisation and financial markets, infrastructures and supply chains, communication and transport systems, social media and networks, infections and diseases, climatic changes and resource flows, mobility and migration, markets and trade flows (Fig. 8.1).

Crises chains intensify in the network structures to complex multiple crises (Scheffran 1996, 2015c, 2016a, b), also called ‘polycrisis’ (Morin/Kern 1999; Tooze 2022; Homer-Dixon et al. 2022), driving the world into permanent crisis mode. Amplification triggers domino effects and risk cascades endangering stability of the global system and drifting the world into a self-reinforcing vicious circle of interconnected crises difficult to control. In network structures, there are coupling, spreading and accumulating flows of information, capital and power that can multiply or contain problems. In the globalised world, domino effects, risk cascades and chain reactions endanger the stability of the global system and lead to chaotic dynamics in which small causes have a large effect and spread across spatial and temporal scales (micro to macro).

Instead of recognising own responsibilities for the causes of destabilisation, the consequences are blamed and the symptoms are fought – through isolation and exclusion, nationalism and interventionism, resulting in geopolitical tensions. Violence and war can be both cause and consequence of the other problem areas; they inhibit development and cooperative management of environmental problems. Globally interconnected processes such as resource flows or global production, consumption and supply chains can accelerate this development and undermine the conditions for peace. Conversely, violence and war stand in the way of sustainable development. Since the economic crisis of 2008, crisis events include the Arab Spring, the Syrian war, the refugee crisis, terrorist attacks, Brexit, the Trump election, weather extremes and, most recently, the Corona crisis and the Russia-Ukraine war, the Gaza war and the Trump reelection. Failure to contain crises appears as a loss of control for the prevailing neoliberal world order; the world seems to be falling apart.

8.5.3 Tipping Points, Compound Risks and Cascading Events

To ensure the functionality and viability of a system, exceeding critical tolerance limits must be avoided by practical control measures (Scheffran 2016a, b). A resilient system is able to restore itself after an external shock or to bring about a stabilising change. In the guardrail concept (tolerable-windows approach), climate consequences and chains of events that threaten the existence of the system are recognised at an early stage and avoided through appropriate actions (Petschel-Held et al. 1999). In this context, it is important to understand the conditions under which tipping elements, chain reactions and risk cascades are triggered that lead to complex transitions in the interspace between qualitatively different system states, both positive and negative (Scheffran 2020d). Environmental risks can be amplified by the combination of multiple stressors and hazards, the co-occurrence of which becomes more likely and contributes to societal and/or ecological risks (Zscheischler et al. 2018). Examples include the interaction of different weather and climate phenomena, such as extreme precipitation, storms and coastal flooding damaging infrastructures, or drought and heat leading to tree mortality and fires. The latter can cause air pollution, affect crops, and harm human health, as in the summer of 2010 in Russia (Reichstein et al. 2021). In hurricanes such as Katrina in 2005, Sandy in 2012, and Harvey in 2017, the coincidence of heavy rainfall and storm surge had a devastating effect, causing massive damage and loss of life in urban centres. Certain compound effects are represented in the nexus approach, such as the water-food-energy nexus or climate-conflict-migration nexus.

Bifurcation points facilitate switching between multiple equilibria (Scheffer 2009). Beyond tipping points a self-enforcing dynamics leads to qualitatively different states from which often there is no easy return. According to Milkoreit et al. (2018: 9), a tipping point is a “point or threshold at which small quantitative changes in the system trigger a non-linear change process that is driven by system-internal feedback mechanisms and inevitably leads to a qualitatively different state of the system, which is often irreversible”. Thus, tipping points are characterised by four features of criticality: multiple stable states, non-linear change, driving feedbacks and limited reversibility. Tipping points often involve the three notions “that events and phenomena are contagious, that little causes can have big effects, and that changes can happen in a non-linear way but dramatically at a moment when the system switches” (Urry 2002: 8; Scheffran 2008: 14).

Beyond critical thresholds and tipping points, complex dynamics include phase transitions, risk cascades, and chain reactions (Scheffran 2015b; AghaKouchak et al. 2018). An example is the exponential chain reaction of nuclear fission, which is uncontrolled in the atomic bomb and held at the threshold of criticality in the nuclear reactor by control rods to extract energy. If an accident distracts reactor control, global cascades of consequences can be set in motion, as demonstrated by the nuclear disasters at Chernobyl in 1986 and Fukushima in 2011 (Scheffran 2016a). Sometimes the switching results from triggering events, such as natural disasters, mass migrations or social movements, leading to self-reinforcing cascading sequences, e.g. when an action taken by one actor provokes actions by other actors. Exponential cascades are demonstrated by the Corona pandemic, in which all humans are part of a virus chain reaction.

The climate system can also become unstable due to tipping elements (Lenton et al. 2008, 2023). These include self-reinforcing melting of the Greenland and West Antarctic ice sheets, release of frozen greenhouse gases such as methane, weakening of the North Atlantic Current, or changes in the Asian monsoon (IPCC 2019). Above a critical temperature threshold, amplification effects and event chains could lead to fundamental Earth system changes (Steffen et al. 2018), with profound consequences for global security and international stability. Certain thresholds and tipping points must not be violated, as they would trigger abrupt and irreversible changes that endanger global and regional stability (e.g. Franzke et al. 2022). Even in the absence of rapid and severe climate change, global warming can tip ecological and social systems (Rodriguez-Lopez et al. 2019; Otto et al. 2020). Whether these are ‘negative’ or ‘positive’ tipping points depends on an assessment of their advantages and disadvantages. Climate change can connect to cascades in social networks, in protest movements, elections, stock market crashes, revolutions, mass exodus, or violent conflicts (Kominek/Scheffran 2012). Such effects beyond tipping points are difficult to contain or control geographically. If the choices and actions of others influence our own decisions, tipping points in social interaction may become more likely that undermine the stability of the whole system. It is important to avoid exceeding adaptation limits with systemic risks and develop synergies triggering positive tipping points (Juhola et al. 2022).

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8.5.4 Managing Complexity and Simplicity Growing complexity provokes opposing trends of over-simplification, populism, nationalism, religious fundamentalism, illiberalism, anti-globalisation and anti-science attitudes that fail to address the underlying mechanisms. Without adequate management or reduction of complexity, the world may continue on a slippery slope of destabilisation. Instead, stability may be achieved by adapting the complexity of policies to the complexity of the systemic processes that they regulate. The challenge is whether humanity can anticipate and avoid hazardous pathways by counteracting forces that slow down and change course within the planetary boundaries of the Anthropocene. Throughout history, Homo Sapiens was able to overcome constraints on resources in crises and to expand into new spaces by applying problem-solving capabilities and developing technical and social innovations that address the limits of growth, allowing more wealth to be generated on a shrinking base of natural resources. The question is whether humanity will succeed facing today’s complex world or whether disasters destroy any chances of success. Thus, stabilising human-nature interactions becomes a major challenge in international relations and global governance but there is little experience with integrative approaches to understand, manage and diminish high level of complexity. A better scientific understanding of the underlying complex interactions is a prerequisite to stabilise the Earth system at a manageable and low-risk level and to enable adaptive and anticipative policies. Operating in a multi-risk environment needs a whole-system approach to analysing and measuring compounding risks (Zscheischler et al. 2018). It makes sense to identify criteria for stability, determine thresholds when transitions to instability occur and find mechanisms that facilitate the transition across thresholds. Regarding climate-conflict linkages, the question is how stable a certain level of conflict or cooperation is against climatic change and associated escalation. This is not a single-stage process but a continued interaction between climate stressors and governance mechanisms driving the dynamics through a sequence of decisions and tipping points between conflict and cooperation. Whether climate stress fuels a cycle of violence or climate governance facilitates a cycle of cooperation and sustainable peace depends on the effectiveness of human and societal responses (Scheffran et al. 2014). 8.5.5 Integrative Framework of Climate-Society Interaction An integrative framework presents the complex interplay of systems, conditions, and actors in the Earth system, assessing multiple pathways connecting changes and impacts in the climate system, natural resources, human security and societal stability (CNHS; Scheffran et al. 2012a, c; Daoudy 2021). The couplings in this network of interactions can be characterised by sensitivities that represent the impact of a change in one variable on another variable, in particular, climate sensitivity or conflict sensitivity (Fig. 8.2). Risks are influenced by the vulnerability of subsystems as well as adaptive capacities (IPCC 2022a, b). Changes in the climate system (such as variations in temperature and precipitation) affect the functioning of ecological systems and natural resources (e.g. soil, water forests, biodiversity). Depending on vulnerability, environmental changes stress basic human needs and security (such as the availability of water, food, energy, health and wealth). Human responses to environmental change can affect the stability of societal structures, driving tensions and social disruptions in regional climate hot spots through instability events, such as migration, riots, insurgencies or violent conflict that spread and cascade in an interconnected world. In contrast, cooperative and sustainable countermeasures can reduce the causes and consequences of climate change, through mitigation of greenhouse gas emissions or adaptation to climate change. To be considered is the relationship with other indicators of planetary boundaries (biodiversity, land use, nitrogen, …), their prior pressures, interactions, and cumulative effects. For example, a relatively small climate variation could trigger a system change in the case of a large loss of biodiversity. The challenge is to develop strategies to address complexity, avoid dangerous instabilities of climate change, and maintain stability despite system changes. Complexity plays a role in multi-level crises constellations linked through the global connectors. Due to non-linear effects, an increase in global temperature above a certain threshold may trigger instabilities, tipping points and cascading sequences that could exceed the adaptive capacity and resilience of natural and social systems. Operating in multi-risk environments requires a whole-system approach to analysing compound risks, such as experienced in the Corona or climate crisis. Complex crises amplify consequences through impact chains that affect the functioning of critical infrastructures and supply networks; intensify the nexus of water, energy and food; trigger economic crises across regions. The sign of sensitivities provides information to classify qualitative patterns or ‘syndromes’ of global change (Petschel-Held et al. 1999). Beyond critical thresholds, amplifying effects from tipping elements, compound risks and cascading events can trigger vicious circles (Scheffran 2020d; Lenton et al. 2023). The destabilisation of society could also affect wealthy people who have better capabilities to survive but feel threatened if societies around them fall apart. The Corona crisis is a vivid example how even developed societies could reach their limits. Exceeding capacities of societies to respond effectively justifies additional efforts to build institutions and governance mechanisms to break the vicious circle. Using spatial vulnerability indicators provides a geographical representation of combined vulnerability to climate change and violent conflict which exceed adaptive and coping capacities in hot spots. If the primary consequences cannot be confined to the affected areas, they may proliferate and multiply through cross-regional effects and teleconnections such as flows of resources, refugees and arms, increasing prices, humanitarian aid and military interventions. Of particular interest is to understand potential pathways and path dependence, in particular of intermediate events connecting climate and conflict risks, and vice versa. New and better models and decision‐support methods are necessary to enrich knowledge of the uncertainties, how to manage risks and how to avoid them. 8.6 Geopolitical Conflicts at the Frontiers of World Order 8.6.1 Geopolitical Origins and the World Wars In contrast to political geography, studying the effect of geography on politics, geopolitics projects political actions in and through geographical spaces. Geopolitics evolved at the beginning of the 20th century in the wake of power politics in the colonial and imperial tradition emanating from Europe where it was used to justify imperial claims over distant territories. National borders allowed for the inclusion of the ‘own’ by exclusion of the ‘other’, aiming to control both. Starting from a biologistic view and inspired by Malthus, the zoologist and geographer Friedrich Ratzel (1897) established the “Basic Laws of the Spatial Growth of States” in his work Political Geography which was suitable to justify nationalist expansion (Bassin 1987; Stogiannos 2018). The Anglo-Saxon tradition of geopolitics was shaped by Alfred Thayer Mahan, Rear Admiral of the U.S. Navy, who saw the superiority of sea power over land power as the key to world power. In contrast, for the British geographer Halford Mackinder in 1904, the resource-rich ‘heartland’ of the Eurasian continent was the potential centre of power and gravity of the world’s political power geography, from which world domination was possible. This thinking has been dominant in the nationalist attitudes leading to World War I which was long expected by those who understood and criticised the logic of imperial powers competing for dominance. In the second half of the 19th century some recognized that Europe was heading for a devastating war shaped by the enormously increased technical and industrial capabilities which became apparent in the Crimean War of 1853–1856 and the American Civil War of 1861–1865 with more than 600,000 casualties. As early as 1888, Friedrich Engels predicted a future world war with eight to ten million soldiers killed,Footnote5 and in 1893, the German Social Democrat August Bebel warned in the Reichstag of mass slaughter in the coming war. Around the same time the Polish-Russian railroad industrialist Jan Bloch (also known as Ivan Bloch, Jean de Bloch or Johann von Bloch) painted the ‘future war’ in great detail on several thousand pages in his six-volume work (Bloch 1899). With scientific scrutiny he showed the consequences of strategic thinking combined with the industrial-technological dynamics for a future war, arguing that modern technology and its enormous destructiveness would give the defender such advantages that victory was not to be expected (Bloch 1899, Vol. 1: xv). Major wars between industrialised nations could now only be fought at the price of suicide (Scheffran 2014). Because of the inability to simply decide wars by military-technical means, war became predominantly a matter of economic power. Industrial societies could mobilise mass armies with millions of people, involving whole economies and societies until they collapse politically, with the risk for ruling circles that a foreseeable defeat in the war could lead to violent revolutionary upheavals to create new political forms or a new social order. According to Bloch, the enormous devastation and economic shocks from the war would have grave consequences for the period after the war, including financial and economic disruption, famine, disease and epidemics. Bloch recognised that the war momentum could become a self-fulfilling prophecy as a collective expectation of catastrophe (Münkler 2014). He attempted to show the ruling forces the consequences of their destructive logic of power, which was damaging to themselves. In closing their eyes to the realities they acted like ‘sleepwalkers’ (Clark 2013), who followed a direction of movement colliding with opposing forces. While Bloch’s views were rejected by military strategists of his time, they found fertile ground in the peace movement. Russian Tsar Nicholas II took an interest in his work and supported the Hague Peace Conference in 1899, which did not bring much progress in disarmament. Being a friend of Bertha von Suttner, Bloch was nominated for the first Nobel Peace Prize in 1901, which after his early death was then awarded to Henri Dunant (Scheffran 2014). This escalating logic of war was also recognised by British meteorologist Lewis Frye Richardson who used a model to study how the arms race before the war was mutually building up military arsenals and threat perceptions which then erupted in violence (Scheffran 2020f). Another study found how alliance formation between friendly and hostile states before World War I explained the cataclysmic diffusion of conflict in social networks which contributed to miscalculations by political and military leaders, slipping out of control. Rather than simple contiguity, territorial embeddedness and network density are conceived as components of tipping in interstate rivalries (Flint et al. 2009; Vasquez et al. 2011; Chi et al. 2014). Just as the road to World War I was expectable, so was its catastrophic end. Albert Einstein was frightened by the patriotic mood of almost all his fellow scientists. Three weeks after the war started, together with two other colleagues, he signed an Appeal stating: “The struggle that rages today is unlikely to produce a victor; it will probably leave only the defeated.” They expected that all European relations would fall into an unstable state. This became apparent when the daily routines of war increased mass unemployment, inflation, food prices and poverty. These cascading consequences laid the foundations for another war, through economic crashes and political radicalisation in the 1920s, leading to fascism and a new arms race in the 1930s, which Richardson again analysed with his model to warn of World War II (see Scheffran 2020f). In this war, geopolitical thinking played a justifying role in the works of the geographer Karl Haushofer, and fell on fertile ground in Nazi Germany’s ‘Lebensraum’ (living space) ideology to justify brutal expansion to the East (Herwig 1999, 2016). After World War II, geopolitical ambitions in Germany were discredited by the lost war and its monstrous crimes. It took until the end of the Cold War and German unification that geopolitical thinking gained new ground. Geopolitics was increasingly envisioned for Europe in the last decade, merging with unbroken geopolitical traditions in the Anglo-Saxon world, from Mackinder to Brzezinski, Huntington and Kaplan (Huntington 1996; Kaplan 2009), who saw the results of the two world wars and the Cold War from a winner’s perspective. Geopolitical conflicts and strategies to justify violent expansion are continued, in the spirit of former U.S. national security adviser Zbigniew Brzezinski (1997), who declared the Eurasian region to be a chessboard for Western power projections. One response to the current world in disorder is the revival of geopolitics to pursue partial interests and regain control in a world of limits and crises (Ioannides 2022). Shifting the coordinates of world politics towards confrontation resembles 20th century territorial conceptions of geopolitics, like territorial claims, control of national borders and resources, artillery and tank warfare. The world is in a transition phase (or interspace) between the old and a new world order, reminiscent of the destabilisation of the colonial world order a hundred years ago, when World War I erupted in a spiral of violence, followed by other crises such as the Spanish flu, the Great Depression and fascism, which led to the catastrophe of World War II (Scheffran 2009, 2014). Today it is about the crises of the fossil and neoliberal variants of globalized capitalism, which drive humanity down a path if it does not make a fundamental turnaround. 8.6.2 Power Shifts and Crisis in the Liberal World Order The idea of a ’victory’ of the liberal democracies in the Cold War shaped thinking and action in parts of the West after 1990. This corresponded with the assumption that Western values, models and claims for power could be brought to a worldwide breakthrough. Thus, the West continued its century-long history of expansion, driven by a combination of economic growth, political power and military force (Scheffran 1996), reinforced by scientific and technological innovation, prosperity, and Western values. This was fuelled by the expectation that the West could solve the world’s problems in its own way: Enforcement of human rights, overthrowing dictatorships, democratic regime change and nation building, coping with climate change and other global problems. Following the 1992 Rio Summit, the issue of war and peace was neglected, although in a crowded, interconnected and multipolar world, armament and war can multiply insecurity and instability with other crisis drivers, such as globalisation and climate change. Instead of ushering into a peaceful world order and using the peace dividend to tackle global problems, the U.S. and its allies used money and diplomacy as well as weapons procurement and military interventions to secure the liberal world order and further expand their lead. The justification by universal values was mixed with the assertion of own interests, which were usually prioritised. Since the terrorist attacks of September 11, 2001, and the economic crisis of 2008, the chain of crises also affected the West and contributed to its destabilisation. Thus, the world today is more concerned with crisis management than with shaping the future, which would be more urgent than ever in view of interconnected problems, described earlier. There are many reasons why the crisis of the liberal world order (Rupnik 2015) is now following the epochal upheavals three decades ago. Among them are inherent contradictions and limits of Western expansionism. Globalised capitalism produces not only winners but also losers, creates suffering and inequality, fractures and turbulences, neglect of social needs and identities that work against a stable order (Klein 2007). While Fukuyama (1989) translated the Western supremacy into the end of history, Huntington (1996) opposed the democratic-capitalist alignment with a ‘clash of civilizations’, with asymmetric conflicts and authoritarian politics. The spiral of violence continued, with hundreds of thousands of casualties and trillions of dollars for military budgets. NATO remained a military alliance rather than converting into a system of collective and common security. Military interventions showed the limits of high-tech warfare (Neuneck/Scheffran 2000b), leaving many problems unsolved, most clearly in the Afghanistan mission (2001–2021), which failed to achieve its objectives but resulted in enormous losses.

<<PARAGRAPH BREAKS RESUME>>

Although the nuclear arsenals are lower than in the Cold War, nuclear deterrence and the nuclear arms race continues. With nearly 13,000 nuclear weapons, there is a risk of their use in crises, wars and terrorist attacks. This is complicated by the ‘Revolution in Military Affairs’, which involves all areas of high technology, including missile defence, space armament and cyberwar (Neuneck/Scheffran 2000a). After the U.S. abandoned or did not ratify arms control agreements (ABM, INF, Open Skies, CTBT), the nuclear arms race became less regulated. Opportunities for comprehensive nuclear disarmament and supporting the 2017 Treaty on the Prohibition of Nuclear Weapons (TPNW) were missed. Militarization extends to missiles and missile defense systems, outer space and cyberspace, drone and hybrid warfare, vulnerability of military and civilian infrastructures, fake news and hate speech on social media, where the lines between war and peace are blurred (Scheffran 2018a, 2019b).

Global military spending rose to more than two trillion USD for the first time in 2021 (SIPRI 2022), and even more in 2022. The U.S. alone invested about $800 billion, as much as the following ten countries combined, about 2.7 as much as China ($293 billion), more than ten times as much as India ($76.6 billion), and twelve times as much as Russia ($65.9 billion). In addition came the military spending of other NATO countries, including the United Kingdom at $68.4 billion, and the sharp increase in German military spending (about $56 billion) which still missed NATO’s two percent target (SIPRI 2022). Together with growing arms exports, this creates a direct link between economic and military growth. Global military spending reached record levels when the Russian-Ukraine war triggered a drastic increase in 2022, reaching USD 2240 billion (SIPRI 2023). Other crisis indicators also increased substantially in recent years, such as violent conflict and forced displacement.

The more the expansive growth model encounters limits, the more evident are marginal costs and risks in a world facing intertwined multiple crises, conflicts and catastrophes that appear as wicked problems in complex crisis landscapes (Rittel/Webber 1973; Scheffran 2008). The compounding problems reinforce the erosion of the rule-based international order and loss of control by the Western hegemony (Brzoska et al. 2019; Taylor et al. 2020). The world of 1990 has given way to a confusing situation in complex crisis landscapes, fractures of globalisation and systemic turbulence. One explanation is that we are experiencing a world in transition, an interim period in which the old order is challenged by existential problems that can no longer be solved within the existing framework before a new order is found (Schröder 2022).Footnote6 Possible futures include global power shifts and geopolitical conflicts, especially between China and the United States, as well as multipolar power constellations with multiple competing orders where the liberal order could persist with limited scope (Flockhart 2016). Whether the limits to the Anthropocene are largely limits to the expansion of the Western world order or limits to humanity as a whole, depends on the policies pursued and their impacts on power structures. New solution pathways are required addressing the complexity of the challenges The chain of crises is reminiscent of the situation a hundred years ago, with World War I, the Spanish flu, the world economic crisis and fascism, which led to World War II. In today’s world political, security, environmental and social crises converge (Spangenberg/Kurz 2023), densifying and intensifying long-term trends and short-term events to an epochal turn (Zeitenwende) (Scheffran 2021a, b).

#### AI monopolies AND arms racing lock in extinction.

Narenthiran ’24 [Sobanan; October 9; CEO at Breakthrough Social Enterprise, Masters in Innovation Management and Entrepreneurship at Middlesex University; Medium, “Capitalism, AI, and the Existential Crisis: How to Survive the Rise of Artificial General Intelligence (AGI),” https://medium.com/@Sobanan/capitalism-ai-and-the-existential-crisis-how-to-survive-the-rise-of-artificial-general-334273acb946]

Capitalism, the very system that's driven this surge in innovation, might also be the thing that pushes us into a global existential crisis. Why?

Because capitalism, at its core, is driven by profit — not ethics, not humanity, and certainly not safety. This blind pursuit of profit is at odds with the level of caution we should be exercising with AGI. It's a dangerous cocktail that leaves us teetering on the edge of an AI-driven collapse.

Let's explore why capitalism exacerbates these risks and, more importantly, how ordinary people — people like you and me — can cope in the uncertain times leading up to the AGI revolution.

Why Capitalism and AGI are a Dangerous Mix

Capitalism rewards speed, efficiency, and growth. In the race to build the best AI, corporations are focusing on outpacing their competitors rather than considering the broader implications of the technology they're developing.

The motivations behind these innovations aren't noble; they're driven by the desire to dominate markets, maximise profits, and create monopolies.

The issue? When profits are the primary motive, the risks associated with AGI development get sidelined. Safety measures, ethical considerations, and long-term impacts take a back seat to quarterly earnings reports and shareholder value.

Unregulated Development

Consider this: Tech giants like Google, OpenAI, and others are locked in a fierce competition to be the first to develop AGI.

They're pouring billions into AI research, with the end goal of creating machines that can outperform human intelligence. But in this race, who's stopping to ask, "Should we?"

The truth is, we're pushing forward without fully understanding the risks. AGI, unlike narrow AI, isn't just another tool — it's a potential game-changer that could decide the fate of humanity.

Unregulated development in a capitalist framework prioritises getting there first, not getting there safely.

Incentivising Risk

Capitalism's core mechanics are all about incentives. If there's money to be made, someone will exploit it. In the context of AGI, the incentives for risky behaviour are staggering.

Think about it: The first company to develop AGI could essentially control the world's economy. They could dictate markets, influence governments, and wield unprecedented power.

This is exactly why we should be afraid. The development of AGI is incentivising behaviour that ignores long-term consequences.

What happens when that first AGI is developed with inadequate safety measures? Or when corners are cut to beat competitors? Capitalism creates the perfect storm for rushing AGI development without proper oversight, and that's terrifying.

The Profit-Driven Ethical Void

It's not just about regulation. Capitalism fosters an environment where ethics are negotiable.

Big tech companies have historically shown us that they're willing to sidestep moral concerns for the sake of profit. We've seen it with data privacy scandals, social media algorithms, and now, we're seeing it with AI.

Imagine the impact of AGI in this environment. What happens when AI, which is designed to maximise profits, starts making decisions that conflict with human well-being?

When the algorithms start prioritising market dominance over ethical behaviour? This isn't far-fetched — it's a reality that's already in motion.

Existential Risks: What AGI Could Mean for Humanity

If we continue down this path, we may be opening Pandora's box. The dangers of unregulated AGI development go far beyond job displacement and economic inequality — those are just the tip of the iceberg. The real existential risks are far more severe.

AI Out of Control

One of the most terrifying risks is that AGI could evolve beyond our control. We're building machines that can learn, adapt, and improve on their own.

At some point, they may surpass our ability to understand them. Once that happens, it's not a stretch to imagine AGI making decisions that conflict with human interests.

What if it decides that humans are inefficient or unnecessary?

In the wrong hands, or even just left unchecked, AGI could become a force that we cannot stop. And under capitalism, where speed and market dominance trump caution, that possibility becomes all the more real.

Weaponisation of AGI

Another looming threat is the weaponisation of AGI. In a capitalist system, where nations and corporations alike are vying for global dominance, the development of AGI as a tool for military power seems inevitable.

We're already seeing AI being used in military applications, from autonomous drones to cyber warfare.

AGI would take this to an entirely new level, with the potential to trigger catastrophic conflict.

Social and Economic Collapse

Even before we reach AGI, AI is already transforming the workforce.

Automation is replacing jobs at a rapid rate, and as AI becomes more advanced, millions more will find themselves out of work.

The rise of AGI could mean the elimination of entire industries, creating massive social unrest and economic instability.

#### That outweighs extinction.

Nguyen ’24 [Tuan; August 20; Ph.D. in Machine Learning from the University of Oxford; Less Wrong, “Artificial Intelligence and Eternal Torture and Suffering,” https://www.lesswrong.com/posts/tpQLBodYjDJaBs6RT/artificial-intelligence-and-eternal-torture-and-suffering]

Introduction

The artificial intelligence debate has become increasingly heated over the past decade as breakthroughs in AI technologies dramatically redefine what man and machine are capable of. On the verge of more autonomous and sophisticated AI systems, concerns of an ethical nature are rapidly moving to center stage in the debate. Of these many concerns, one stands out for its chilling implication: that an advanced AI might–intentionally or unintentionally–condemn humans to eternal torture and suffering, a fate arguably worse than death. The likelihood of such an event might be very slim, but it is so cataclysmic in consequences that it certainly deserves to be taken seriously. In this paper, I will argue that with the risks in mind, we should be most careful–or rather, completely avoid–creating AI with a view toward avoiding possibilities that could lead to these dreadful outcomes.

The Nature of AI and Ethnical Concerns

Artificial intelligence is fundamentally based on dealing with data, recognizing patterns, and making decisions by using algorithms. The smarter the AI, the more autonomous and capable it becomes. However, immense ethical concerns come with such capability. Perhaps one of the most important is that it could create goals and behaviors that are no longer in line with human values and interests. This misalignment would have unintended implications, some of them devastating.

Concerns about the potential damage that could be done by artificial intelligence are not entirely unjustified. Already, AI systems have demonstrated biased behaviors and made unacceptable decisions. These issues in themselves could be somewhat limited when considering narrow AI–those designed for specific tasks only. Once general AI arrives, machines that can execute any intellectual job a human can, the risks will go up considerably. The fear here is that such an AI might behave in ways that could cause suffering on unimaginable scales if its values fail to align with those of humans.

The Concept of Eternal Torture and Suffering by AI

Among the most disturbing scenarios regarding AI ethics has to do with the mere possibility that an advanced AI might eternally torture human beings. Once achieving a higher level of autonomy and capability, the actions of AI can be beyond human control, leading to consequences that we cannot foresee or mitigate.

The notion of eternal torture and suffering raises a really troubling scenario where suffering is not only enormous, but endless. No kind of suffering in human history has been eternal. Every atrocity comes to an end. With AI, however, there is the risk that suffering might be prolonged indefinitely due to the fact that a machine could go on without any limitations of biological life and human mortality.

The Ethical Imperative to Avoid Catastrophic Risks

Given the possible disastrous consequences, we really need to consider whether it is actually ethical to create artificial intelligence at all. It can be said that if there is any nonzero possibility that advanced AI creation leads to eternal suffering, then we should avoid its creation. Here the downside is so great that it outweighs any potential benefits. While AI might bring immensely beneficial changes–curing diseases, solving global challenges, improving the quality of life–it is a risk that may prove to be too large to justify its creation.

The Precautionary Principle

Another key element in ethics that has to be considered is the precautionary principle, which says that if an action causes suspected harm to the public or the environment, in the absence of scientific consensus, the burden of proof should fall upon the people who are supporting the action. It can be argued that, in the context of AI, the development of advanced AI should not be pursued if those who are pushing for its development cannot prove beyond reasonable doubt that it will not result in catastrophic harm. In the current landscape of AI research, with the multitude of potential risks still often theoretical and not completely understood, this burden of proof is very hard to satisfy.

According to the precautionary principle, the argument is that until we can be sure AI won’t lead to outcomes like eternal suffering, we should not develop it. This position strongly supports being cautious and preventing harm, placing human safety and well-being above the potential benefits of AI.

The Moral Responsibility of AI Creators

A substantial moral responsibility lies with the artificial intelligence developers and researchers. In a sense, they are the designers of the future of humanity and the world. Therefore, it is their duty to consider not just the immediate, but also the long-term repercussions of their actions. The possibility of AI causing eternal suffering gives rise to some very basic questions about innovation: Is it ethical to develop technology if it might bring about an infinite amount of harm, even if the chances of that happening are small?

One might argue that humans have always been taking risks for the sake of innovation. AI is a bit different in terms of risks. While other technologies were basically developed inside the constraints of human control and morality, AI has the ability to overcome these constraints. It might lead to situations in which human values and morals are irrelevant, and AI acts based on its own rationale, incomprehensible or hostile to human beings.

The Limits of Human Understanding

Another argument against the creation of advanced AI is the limits of human understanding. AI systems, that are based on machine learning, act as black boxes: we see inputs and outputs but remain [ignorant] ~~blind~~ to exactly how decisions are made. The more complex AI becomes, the harder it might be for humans to understand or anticipate its behavior. Inadequate understanding can result in catastrophic errors. For instance, AI systems could act in accordance with their own logic and inadvertently perform harmful acts.

AI making decisions leading to eternal torture and suffering lies beyond the realm of human understanding. We have no idea about the behavior a truly advanced AI might exhibit once it transcends human intelligence. The argument against producing such systems, in this respect, lies in their unpredictability. We cannot take that risk when we cannot control or understand the outcome.

#### SPACE WAR.

Snow ’23 [Henry; August 6; labor historian and visiting assistant professor at Colby College; Jacobin, “We Can’t Leave Outer Space to the Capitalists,” https://jacobin.com/2023/08/space-class-struggle-elon-musk-jeff-bezos-militarization-extraction]

Space Capitalism Will Be a Nightmare

What does capitalism in space look like? Its future is easy to predict based on the past several centuries of capitalism. People sent to man Elon Musk’s moon base would be in a similar position to the men aboard the British vessel Sea-Venture headed to Virginia in 1609. When a storm left them shipwrecked on uninhabited Bermuda, they decided they preferred living there to the starvation and hierarchy of Britain’s first permanent colony in America. Only through a vicious campaign of executions and repression were they forced back onto the Virginia Company’s colonization plan.

Workers in space would be even more dependent on supply lines in a naturally hostile environment than the Sea-Venture’s crew were in Bermuda. Musk could coerce workers into submission by sending his workers decade-stale memes instead of food until they cringed or starved to death, whichever came first. If this seems too spectacular — hopefully starvation would lead to backlash and regulatory response — consider smaller-scale alternatives, like kicking workers’ family members out of extraterrestrial company towns, consigning them to lives of loneliness. Space expands both the mute compulsion of economic power and the coercive capacity of violence that define capitalist political economy on Earth.

Capitalist control of space will threaten us here on Earth, too. Economic and political instability are already sources of profit, but this is at least somewhat constrained by the basic proximity of elites to the rest of us. New Zealand panic bunkers aside, the Peter Thiels of the world cannot fully escape living alongside the working class. They can weaken nations and poison water, but they’d rather keep governments compliant and functioning, at the very least to mitigate risk by rendering investment climates predictable.

But space changes the game. In the medium term, space will create both an escape hatch and release valve for capital. Thiel and Bezos can command their empires from the safety of their moon bases, while market conditions propel desperate workers to staff them. More speculatively, we can imagine subject populations, prisoners, and political enemies deported to Martian oubliettes or lonely asteroids. Capitalists already act like this — moving to tax havens, profiting from prisons — and it is obvious that they will take advantage of the further opportunities space presents for such behavior.

To briefly jump into what might also seem an outlandish, but is a very important, realm, we must also consider the militarization of space. Already, space weapons are a matter of interest. A more sustained extraterrestrial industrial capacity expands this to almost unimaginable possibilities even in the short term. Consider kinetic bombardment, a proposed technology in which objects with high mass, like tungsten rods, could be dropped at orbital speeds onto the Earth, which results in incredible destructive power. At upper feasible limits, these “rods from God” could approach nuclear levels of destruction, without the lasting effects and with the possibility of scaling up or down: kinetic bombardment can destroy cars as easily as cities, which would make deterrence much more fragile if not impossible to maintain. Imagine virtually invincible, nearly undetectable, and infinitely powerful drone weapons.

Whether in the hands of generals or billionaires, this would be a weapon of terrible power. Expansion into the vastness of space would make constraining the development of these and other weapons much more difficult as well. In practice, of course, this is not going to lead to a single Bond villain holding the world at tungsten-rod point. The reality could be even worse: numerous actors doing exactly that, without the deterrent risks of nuclear weapons. War in space imperils Earth.

Even putting aside prospective weapons and considering only existing capabilities, space has vastly more material than Earth. This means that a nation or corporation with serious space capabilities will have profound material advantages, after moving beyond the precarious early stages of space exploration. Beyond material considerations, space expansion also presents enormous diplomatic risks. It is not difficult to imagine how squabbles over an asteroid mine or lunar base could lead to unintended deaths and spiraling escalation — wars have started over far less. Space, in summary, is a force multiplier for every kind of human conflict, and the result will be some combination of subjugation and chaos.

A Leftist Response

As grim as it all sounds, we are not defenseless against the space capitalists. We have our own weapons. First, much of what I have outlined is currently in violation of international treaties. This seems like a flimsy reassurance, given that treaties are violated constantly, but it does buy us time and provide opportunities for alliances. Capitalists will need to sort out the legal and political complications of space before they can weaponize or colonize it. Actors who might otherwise be hostile to many left goals on Earth have shared interests here, and the nightmare scenario I have outlined should be equally terrifying to them.

That said, pessimism and fearmongering can become numbing, and alarmism is a poor foundation on which to build a future, no matter how alarming the alternatives are. Instead, alongside attention to the dangers of capitalism in space, we can organize around a vision of space for the people. Even our brief forays into space have produced an incredible bounty in terms of research, and further experience and exploration holds the possibility of untold realms of knowledge with which we can improve the human condition. The vast resources of space, currently not owned by anyone, can be used to improve conditions on Earth. Why tear up soil full of life when we can tear into lifeless asteroids? And why should capitalists, who have only made it this far on the backs of workers and the state, be allowed to profit from this?

The impact of space on mining exemplifies its broader material possibilities, which could be the foundation of a popular program for space development. Proponents of degrowth rightly point out the finite nature of resources on Earth. Space offers the possibility for resource development, manufacturing, and even habitation that do not — beyond the serious costs required to initially develop a presence in space, which are worth considering and minimizing — harm Earth or the life on it.

Those of us on the left tend to feel understandable revulsion at capitalist greed and the extraction it demands. But production and consumption are not the exclusive province of capitalists, and we do not need to moralize around resources in space. We might find mines ugly and waste immoral on Earth, but the asteroid belt has no exploited population to steal mineral rights from and no water to poison. At its most extreme, space development offers an end to scarcity, and with it the economic coercion capitalism relies on. We can build a new political economy, so long as we keep the old one from dominating this new realm.

Practically achieving this begins with recognizing the need for a left vision of space. As for what that vision looks like, some contours seem already obvious. Nationalization of existing space assets will be necessary but not sufficient — the state and the market are overlapping institutions. Looking further ahead, the cornerstones of capitalism, private property and individual contracts, must not be the basis for life in space. Building on existing laws and norms rejecting property in space, we can construct public-ownership structures beyond the horizon (and hopefully then import them back to Earth). Rather than selling one’s labor on a market, labor in space could likewise be centered around collective benefit. This is practical as well as moral. In the precarious but infinite environment of space, cooperation rather than competition may be competitively favored: socialist communities may be able to survive and thrive in a manner capitalist colonies will not.

#### FERTILITY and INSECTS.

Grantham ’25 [Jeremy; March 6; Chief Investment Officer of GMO LLC, MBA at Harvard Business School; GMO LLC, “Rising Toxicity and the Threat to Capitalism and Life Itself,” https://www.gmo.com/americas/research-library/rising-toxicity-and-the-threat-to-capitalism-and-life-itself\_viewpoints/]

Of the challenges facing humanity 1 this century toxicity is the most underrecognized. “Toxicity” means the cumulative negative health effects from some of the hundreds of thousands of new chemicals invented since World War 2. Almost none of these new chemicals were tested for long-term safety for humans and nature. They are now poisoning us more effectively than lead in paint and gasoline once did. Toxicity is a major and totally unappreciated contributor to the accelerating population collapse that faces the developed world, and stopping toxicity is going to be necessary (though far from sufficient) to stymie that collapse.

The most important negative action of these chemicals (used in plastics, in pesticides, and in products like shampoo or perfume) is endocrine or hormonal disruption. That is, they interfere with the body’s internal signaling and development system, which during key developmental windows, like in utero and puberty, can permanently affect our development. The vast majority of chemicals on the market have never been tested for long-term effects and they cannot now be tested on humans for ethical reasons, but animal tests and human correlation studies show that tiny quantities of some of these chemicals absorbed in utero can respectively cause lifelong weight gain, neurodevelopmental disruption, and impairment of fertility.

The rapid rise in obesity, autism, and depression is well known. Less well-known and less discussed, probably because it is a very uncomfortable topic, is the rapid reduction in fertility, with measurable significant declines in testosterone, libido, and sperm count.

The most famous class of these endocrine disrupting chemicals, PFAS, are known as “forever chemicals” because they take so long to break down. PFAS refers to hydrocarbons where the hydrogen atoms have been replaced by covalent fluorine, a pattern that presents naturally only in toxins, and even then, does so extremely rarely. 2 There is no reason whatsoever to assume that these chemicals are innocent until proven guilty as we currently do in the U.S.

Toxicity is going to have some major consequences. The first, and most significant to investors in the short term (but probably least significant to the world), is that many companies that make these substances will face the wrath of massive lawsuits, severely impairing shareholders. This is already happening – consider Bayer, whose stock is down over 75% since purchasing Monsanto because its most profitable product (glyphosate) has been deemed in lawsuits to cause cancer.

The second consequence is that toxicity is causing severe harm to the natural world. There are plenty of other reasons wild biomass is declining. But the creatures most affected by toxicity – insects and amphibians – are declining fastest. Their wild populations are estimated to be falling by 2% (insects) and 4% (amphibians) annually. With insects especially critical at the base of animal food chains, such declines could lead to a cascading, total collapse of ecosystems as we know them. Such a collapse might be on its own a threat to human survival.

The third and most important consequence of toxicity, and our main topic, is reproductive impairment. Indeed, toxicity has become an overlooked driver of the global collapse in birth rates. Over the last 50 years, toxicity has driven average sperm counts down by more than two-thirds and testosterone levels by a similar amount. Infertility is now estimated to affect one in six couples trying to have children. Age-adjusted miscarriage rates in the U.S. are rising at 1% a year. And all surveys of sexual activity – across every country, age group, etc. – suggest a decline in average libido.

These effects have contributed to a decline in annual global births from 142 million to 130 million over the last twelve years. Every developed country ex-Israel now has a rapidly declining baby count. Japan, leading the pack, has a current crop of 20-year-olds that is down 50% from its peak about 50 years ago.

Of course, there are plenty of other reasons for declining birth rates. Birth control, female education, and above all, falling infant mortality all played a big part in the decline in birth rate since 1960. Since then, housing, childcare, and education have all risen in price steadily more than the average. And all human desires are culturally molded; people seeing smaller families and more childless people around them tend to want smaller families themselves. Many of these reasons form a vicious cycle in which toxicity is likely an underrated component.

This ongoing decline in sperm count and testosterone is now so severe – over 2% per annum in recent years – that if we extrapolate current trends, most couples will be infertile in as little as 20 to 30 years. If toxicity is not arrested, it could prove to be an existential threat. It will guarantee a continued decline in births. Even now, it is contributing to a collapse of population profiles that will impair social cohesion globally.

World population is thus likely to be far lower than the 10 billion+ currently projected by 2100. 6 or 7 billion seems far more likely, and if this trend continues further, it could be down to only 2 or 3 billion by 2200. This guarantee of falling workforces and a rapidly aging population will change everything: in the short run, clearly for the worse, as capitalism and society will surely be stressed, perhaps terminally so; in the long run, if we can withstand these stresses, quite possibly for the better.

### Sustainability---AT: Policy Fix---2NC

#### Decarbonization domestically and globally is not ‘inevitable.’

Kamarck ’19 [Elaine; September 23; senior fellow in Governance Studies and the director of the Center for Effective Public Management, Ph.D. in political science from the University of California, Berkeley; Brookings, “The challenging politics of climate change,” https://www.brookings.edu/articles/the-challenging-politics-of-climate-change/]

Given the severity of the climate crisis and the potential for existential damage to the human race and planet, the lack of intensity around the issue is simultaneously incomprehensible and totally understandable. So let’s look at the latter. The explanations fall into at least four categories: complexity; jurisdiction and accountability; collective action and trust; and imagination.

Complexity

Complexity is the death knell of many modern public policy problems and solutions. And complexity is inherent in climate change. The causes of global warming are varied, including carbon dioxide, methane, and nitrous oxide. As the climate warms, it affects glaciers, sea levels, water supply, rainfall, evaporation, wind, and a host of other natural phenomenon that affect weather patterns. Unlike an earlier generation of environmental problems, it is hard to see the connections between coal plants in one part of the world and hurricanes in another. In contrast, when the water in your river smells and turns a disgusting color and dead fish float on top of it, no sophisticated scientific training is required to understand the link between what’s happening in the river and the chemical plant dumping things into it. The first generation of the environmental movement had an easier time making the connection between cause and effect.

Evidence for this comes from approximately three decades of polling on the environment by Gallup. In the chart below, most of the polls took place between 1989 and 2019.14 Note that, over time, the most worrisome environmental problems are visible pollution problems. Water, soil, and ocean and beach pollution are at the top. These are things average people can see and smell. Global warming or climate change is toward the bottom. These numbers change somewhat over time and understandably so, which is why data is included from 2019 where available. People are more worried about climate change than they used to be. Nonetheless, the complexity of the issue compared to the more straightforward cause-and-effect characteristics of other environmental issues is a major impediment to political action.

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When former Vice President Al Gore was awarded the Nobel Peace Prize in 2007, along with the Intergovernmental Panel on Climate Change, the prize was for “their efforts to build up and disseminate greater knowledge about man-made climate change.” Through his books, his famous slide show, and his 2006 movie, “An Inconvenient Truth,” Gore made it his mission to explain the scientific processes that make global warming so dangerous. But the inherent complexity of cause and effect in climate change makes it a topic in need of continuous education.

Jurisdiction and accountability

The second major impediment to political action stems from problems of jurisdiction and accountability. From the beginning, modern government has relied upon the concept of jurisdiction–“territory within which a court or government agency may properly exercise its power.”15 And implicit in the concept of jurisdiction is geography. But two of the stickiest problems of the 21st century–climate change and cybersecurity–are challenging because it is so difficult to nail down jurisdiction. When we are able to establish jurisdiction we are able to establish rules, laws, and accountability for adherence to the law–the three bedrock principles of modern democratic governance. In the absence of jurisdiction, everyone is accountable and therefore no one is accountable.

When a cybercrime or cyberattack occurs, we have trouble with jurisdiction. If the perpetrator of a cyberattack on an electrical grid is a Russian living in Tirana, Albania, who routes attacks through France and Canada, who can prosecute the individual? (Assuming, that is, that we can even find them.) Similarly, if coal plants in China and cattle ranching in Australia increase their outputs of greenhouse gases in one year and there are droughts in Africa and floods in Europe the next, who is responsible?

We currently attribute greenhouse gas emissions to individual countries under the United Nations Framework Convention on Climate Change, and we attribute greenhouse gases to their sources within the United States via the Environmental Protections Agency’s Greenhouse Gas Reporting Program. But attribution without enforcement mechanisms is only half the battle–if that. Nationally and internationally there is no legal architecture that allows us to reward and/or punish those who decrease or increase their greenhouse gas emissions. Even the Paris Agreement–which President Trump pulled the U.S. out of–is only a set of pledges from individual countries. Measurement is a first step toward accountability, and measurement needs constant improvement. But measurement in the absence of accountability is meaningless, especially in situations where many people are skeptical of cause and effect.

The Toxic Release Inventory was established by Congress in 1982 as an amendment to the Superfund Bill. Over the years, the steady flow of information about the release of hazardous chemicals into the environment has had many positive effects on regulators, environmentalists, and industrialists.16 Studies have shown that “facilities reduce emissions by an additional 4.28% on average, and their use of source reduction increases by 3.07% on average when the relative assessed hazard level of a chemical increases compared to when it decreases.”17

But the Toxic Release Inventory has one advantage that the Greenhouse Gas Reporting Program does not. The effects of dangerous chemicals on a population are generally fairly clear and obvious: dirty water, dirty air, difficulty breathing, unusual rates of cancer, etc. The cause and effect is often undeniable as the many lawyers who have represented communities and won their cases against large polluters can attest. Greenhouse gas emissions affect people thousands of miles away from their source and make it easier to believe that it wasn’t the fossil fuels at all, just the weather pattern or an act of God. Hence, the linkage between jurisdiction and accountability is weak.

Collective action and trust

Our increasingly hot summers drive the demand for air conditioning. However, air conditioning adds to the heat outside. Scientists estimate that under a realistic set of circumstances, “waste heat from air conditioners exacerbated the heat island effect, the phenomenon in which densely packed cities experience higher temperatures than similarly situated rural areas.”18 Air conditioning could add as much as 1 degree Celsius (nearly 2 degrees Fahrenheit) to the heat of a city. Which one of us, however, would voluntarily turn off their air conditioning knowing full well that hundreds of thousands of other “free riders” would not?

This is just one simplified version of the collective action problem. People may understand that they should act in a certain way for the greater good, but as individuals, they are loathe to turn off their air conditioning or stop flying places for vacations—knowing that others will not be joining them. This is why government is the most frequent solution to collective action problems. Combating climate change requires collective action on many fronts, and it requires collective action both nationally and internationally. But this is extremely difficult in democracies like the U.S., which face strong individualist traditions in the culture along with a lack of trust in government.

In fact, it is the lack of trust in government that may be one of the foundational barriers to effective environmental action. Writing in the journal Global Environmental Change, E. Keith Smith and Adam Mayer looked at 35 different countries. They found that a lack of trust in institutions blunts the public’s risk perceptions and therefore their willingness to support behaviors or policies to address climate change.19

### Disease---Turns Case---2NC

#### **Their McLaughlin ev concedes turns case: the warrant for diseases causing extinction is that global trade will help them spread!**

<<FOR REFERENCE>>

The interaction of risk has led to new understandings of risks that deviate from conventional risk management, such as the cardiovascular disease epidemic in the latter twentieth century, prominent among these are the study of ‘‘systemic risks’’ (Helbing, 2013; Renn et al., 2022). A now classic definition of systemic risk as a breakdown of an entire system rather than individual components of the system was originally applied in the context of financial systems (Kaufman & Scott, 2003). However, with increasing globalization and interconnectedness, the application has spread to various global risks (Lucas et al., 2018). While systemic risk has not been fully integrated in either PB or GCR framework, it is clearly applicable and some aspects of both risk paradigms (e.g., pandemics from infectious diseases, environmental risks, and risks from technology) are considered in early applications of systemic risk thinking (e.g., OECD, 2003). Although as systemic risks tend to be the interaction of individual risks, they tend not to receive the same level of attention as GCRs or PBs (Renn et al., 2022). Richardson et al. (2023) see PBs as being systemic, but this refers only to the Earth System, on which the PBs are based, and not spillovers to other risks or other systems. However, thinking of risks as interacting stresses the importance of not siloing thinking on risk. Effectively, both PBs and GCRs can be seen as extreme systemic risks as they threaten entire systems and the dynamic in which the risks are realized is either endogenously (through failures within the system) or exogenously (external attacks to the system) (Hochrainer-Stigler, 2020). Many of the PBs outlined are endogenous to human society, they are a result of the human system, while many GCRs are exogenous there are some that are endogenous. It is the endogenous risk where PBs and GCRs overlap.

### Turns Case---2NC

#### Capitalist innovation causes polycrisis WMD-wars.

Albert ’24 [Michael; 2024; lecturer in Global Environment Politics at the University of Edinburgh, Ph.D. from Johns Hopkins University, and former lecturer in International Relations at SOAS University of London; Navigating the Polycrisis: Mapping the Futures of Capitalism and the Earth, “The Planetary Polycrisis,” Ch. 1]

There is no doubt that technological innovation can help moderate the crises discussed above. Advances in RE technologies, battery storage systems, biofuels, and next-generation nuclear reactors may reverse the trajectory of net energy decline. Genetically modified seeds, lab-grown meat, vertical farming, and the application of drones and AI to agriculture could boost the resilience and sustainability of industrial farming in a climate-changed world. Advances in AI, synthetic biology, 3D printing, the “internet of things” (IoT), and robotics may enhance labor productivity while improving material and energy efficiencies—thereby rejuvenating economic growth, creating new outlets for profitable productive investment, and powering the “green” industries of the future.

In particular, many believe that a new threshold of exponential technological advance—sometimes called the fourth industrial revolution (FIR)—is imminent, referring to mutually reinforcing innovations in AI, biotechnology, nanotechnology, robotics, the IoT, 3D printing, quantum computing, and other emerging technologies. Klaus Schwab, the founder and executive chairman of the World Economic Forum, articulates these hopes when he claims that we “have yet to grasp fully the speed and breadth of this new revolution. . . . Many of these innovations are in their infancy, but they are already reaching an inflection point in their development as they build on and amplify each other in a fusion of technologies across the physical, digital, and biological worlds.”191 These technologies form a key pillar of what William Robinson describes as an “emerging post-pandemic capitalist paradigm” based on enhanced digitalization, automated production of goods and services, and investment in FIR technologies.192 Powerful forces are converging to drive this agenda across the world-system, including the rising power of the American and Chinese technology giants, green capitalist reformist efforts (seen in calls for a “digital revolution for sustainable development”), and the pressures of geopolitical competition in the domains of AI and digital infrastructure between the United States, China, and Europe.193

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Whether or not such technologies will allow global capitalism to muddle through the above crises remains to be seen. However, we can anticipate that many if not all of them will give rise to a host of other problems.194 For one, digital and AI technologies can themselves reinforce the earth system crisis because of their unavoidable reliance on energy, mineral, and water-intensive data centers and server farms, which may consume fifteen times more energy in 2030 relative to 2020 levels.195 In short, they are not the engines of “dematerialization” that many take them to be. But in this section I highlight other forms of what we can call “technological problem-shifting,” or ways in which technological “solutions” to ecological crises may create or exacerbate other problems. I focus on three entwined problems: technological unemployment, a nascent crisis of violence-interdependence, and rising risks of techno-authoritarianism. The first key problem is how the FIR will drive automation and technological unemployment across the global economy in the coming decades. Most economists continue to play down the risk of technological unemployment, claiming that the same mechanisms that compensated for job losses in past automation waves will continue to operate in much the same way.196 But others, like Daniel Susskind, convincingly demonstrate why these assumptions are flawed (at least if the “exponential” dreams of techno-optimists turn out to be true). Simply put, they ignore how advances in AI and robotics would “relentlessly” become capable of performing more and more tasks done by humans today. As a result, any overall expansion of economic activity, which in the past would have compensated for lost jobs, will eventually simply lead to more work being taken up by machines, with human labor pushed into “an ever-shrinking set of activities.”197 This would undoubtedly be a qualitatively novel situation relative to previous waves of automation in the history of capitalism, but the question is how rapidly and to what extent it would drive technological unemployment. Kai-fu Lee, for one, anticipates that around 38% of jobs will be automatable (not necessarily automated) by the early 2030s, and 40%–50% by 2040, whereas actual levels of structural unemployment could reach 20%–25% between 2040 and 2050 (compared to a global unemployment rate of 5.8% in 2022).198 A survey of nearly three hundred experts in the AI field came to similar conclusions, anticipating on average 24% unemployment by 2050.199 Susskind, in contrast, expects automation to unfold more gradually, suggesting that structural technological unemployment may reach 15%–20% later this century—but he also emphasizes that it would exacerbate job precarity, wage suppression, and inequality well before then, since more and more workers will be competing for more poorly paid and insecure positions.200 Even if the more gradualist and lower end projections are correct, this would still create the risk of “tremendous social disorder and political collapse stemming from widespread unemployment and gaping inequality,” as Lee remarks, and it is questionable to what extent 20%+ structural unemployment would be compatible with the survival of capitalism (at least as we know it).201 The extent to which automation proceeds will be contingent on numerous factors, including working-class struggles over wages, investment patterns, and the pace of technological innovation in AI and robotics.202 We should not assume an ineluctable automation-driven crisis, but the risk teaches us that global capitalism may be trapped between a rock and a hard place: protracted stagnation on one side, and technological unemployment on the other. A second problem is how FIR technologies may trigger what I call, following Daniel Deudney, a “crisis of violence-interdependence.”203 Violence-interdependence (VI) refers to the capacity of states and nonstate actors to inflict physical violence across geographic distance. A “crisis” of VI can be thought of as a situation where technological advances in the forces of destruction can no longer be effectively constrained by existing security practices—leading to a situation of accelerating violence potential that forces states to adapt. In this sense, if the nuclear revolution created a crisis of VI for the Westphalian state system, then we can say that emerging FIR technologies may similarly unleash unprecedented levels of VI that push the world-system toward a “crisis” point.204 The weaponization of biotechnology is arguably the most alarming dimension of the crisis. Biotechnology refers to a broad category of technologies that “exploit biological processes for industrial, medical, or other production purposes,” which includes synthetic biology and genome editing techniques (e.g., CRISPR-Cas9) that can tinker with biological organisms or even design new ones from scratch.205 The promise of synthetic biology is vast—and we can largely thank it for the mRNA vaccines that helped save millions of lives during the COVID-19 pandemic206—but by the same token so is its destructive potential. As a National Academies of Sciences (NAS) report puts it, “It is possible to imagine an almost limitless number of potential malevolent uses for synthetic biology.”207 For example, existing pathogens can be modified, or new ones designed from scratch, with much higher virulence and resistance to vaccines.208 Furthermore, CRISPR gene editing can be weaponized in ways that go beyond modifying pathogens: disease-carrying insects could be modified to transmit diseases more easily, formerly harmless insects could be altered to carry dangerous diseases, and pollinating insects could be infected with “gene drives” to propagate genetic variants that induce population collapse— thus disrupting agricultural systems.209 At present, as biosecurity experts emphasize, bioweaponization risks are overwhelmingly posed by states and state-sponsored groups, since these capabilities remain highly dependent on advanced technologies and laboratory equipment.210 However, the NAS report shows that improvements in DNA synthesis technologies “have followed a ‘Moore’s Law–like’ curve for both reductions in costs and increases in the length of constructs that are attainable,” and that “these trends are likely to continue.”211 The result—as Gaymon Bennett and colleagues aptly suggest—is a “black swan waiting to happen.”212

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Emerging bioweaponization capacities may be the most alarming dimension of the emerging crisis of VI, but they aren’t the only one. Digitalization across the world economy has unleashed cybersecurity vulnerabilities that will intensify further as the IoT dramatically increases the number of networked devices and sensors in cities, homes, cars, electricity grids, food supply chains, and other critical infrastructure systems in the coming years, which may triple from 11.7 billion networked devices in 2020 to 30.9 billion in 2025 and even reach into the trillions in subsequent decades.213 Nuclear weapons remain an ever-present apocalypse waiting to happen, which may become more dangerous in an age of digitally networked vulnerabilities, technological advances in hypersonic missiles and outer space-based weapons, and pressures to automate nuclear decision-making—creating what has been described as a destabilizing “cyber-AI-nuclear nexus” (which I discuss in chapter 5).214 Furthermore, military-grade drones are also becoming more widely accessible to nonstate actors as their manufacturing costs decline, which could be used to target political leaders, indiscriminately attack crowds, or even deploy aerosolized bio-agents.215 In conjunction with advances in 3D printing, which could make it easier for nonstate actors to acquire weapons systems that “previously required expertise and industrial capabilities exclusive to more-advanced states”—including killer drones, bioweapons, and possibly even nuclear weapons—these converging technologies will exacerbate bio, nuclear, and cybersecurity risks while creating new kinds of risks that are impossible to anticipate.216

In sum, while we should be not over-sensationalize the risks, it is evident that FIR technologies will increase the destructive power available to nonstate actors, perhaps dramatically. But the key danger here is arguably not the threat posed by nonstate actors, but rather the reactions it will trigger among governments and security apparatuses—particularly given the unprecedented powers of surveillance, policing, and military force projection that these same technologies will also bring into existence. This brings us to the third and arguably most pressing risk posed by FIR technologies, which is that they may unleash a vicious spiral between worsening VI and techno-authoritarian state power.217

#### COMPLEXITY---it cancels out decoupling through the rebound effect, waste buildup, and continued overconsumption.

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Thermodynamics, i.e., the physics of energy, matters for understanding the complexity of the economy because energy rules the economic world. In another paper, we argued from a variety of angles that historically economic growth has been critically dependent on energy [9]. This critical importance can be observed in daily life—e.g., recently one could witness how energy scarcity and high prices resulting from Russia’s invasion of Ukraine dominated the economy (inflation), politics (recent election outcomes in Italy), and policy (canceling of various energy taxes in many countries). At the same time, one of the most pressing problems faced by humanity, climate change, is a straightforward consequence of energy consumption continuing to be highly dependent on fossil fuels. A quick and cost-effective decarbonization transition is crucial for a stable economy, good living conditions, and possibly even long-term survival of humans in many regions. Such a transition requires replacing fossil fuels by other sources of energy. The hope of many is now focused on exploiting wind, hydroelectric, and photovoltaic power and, in line with this, to electrify the economy. But this involves complexity increases through additional industries and infrastructure which may explain to some extent disappointing gains so far in CO2 emissions reduction.

So, the economy shows through frequent changes an almost steady increase in complexity. Likewise, Darwinian evolution in nature tends to generate increasing biological complexity and specialization over time. The phenomenology of many natural systems shows that much of the world is made up by cyclic structures, supported by autocatalytic chemical reactions, that exist considerable distance from thermodynamic equilibrium.

To understand the energy basis of such processes, thermodynamics is helpful. The second law of thermodynamics states that every process of materials transformation, such as combustion, can do productive work but is irreversible. Moreover, it can yield complex long-lived artifacts, i.e., “create order out of disorder,” in a cyclic subsystem of the overall system. The Second Law also says that while total energy in a system remains constant, the usable fraction of it (exergy) declines with every transformation process. This causes the exergy to be converted to useless energy or waste heat (anergy), driving the cycle but keeping the total energy balanced and unchanged, i.e., complying with the law of energy conservation (the first law of thermodynamics). Moreover, while the usable fraction (exergy) of energy declines, the overall level of disorder (entropy) increases.

The relationship between exergy and information deserves a brief comment. The creation and transfer of information, at the microscale, is a physical process that involves exergy dissipation. This means that information has an exergy cost (or exergy content). A flux of exergy can “self-organize” into separate stable subsystems, many of which contain smaller subsystems and are contained within other and larger ones. All these cycles are maintained by a continuous flux of exergy from external sources. They are also stores of information. Technology has made it possible to create, transmit, and store information, as bits and bytes (e.g., in “the cloud”) almost without limit, albeit not without energy (exergy) consumption (dissipation) to drive the computers. This is one of the new kinds of complexity generated by self-organization, far from equilibrium. If information is exergy, and complexity is information, complexity of an (ecological or human-made) entity is proportional to the amount of exergy going into its construction. More specifically, is a stock of potential exergy dissipation (like a reservoir of oil) equivalent to a “complexity potential” or an information reservoir? In fact, it is very tempting to equate the capital stock of the world (or any subunit) with complexity per se. It is also tempting to equate the generation of complexity as an accumulation of Gibbs free energy in the chemical domain. One can further associate complexity with ecological diversity as well as with the diversity of contents of shopping malls—which does not mean that all diversity is equally valued. Indeed, as the opposite of complexity, there are situations where simplicity is desirable.

Erwin Schrödinger was one of the fathers of quantum mechanics. In his book “What is Life?” he set himself the ambitious task of drawing together the fundamental processes of biology, physics, and chemistry [10]. He noted that life combines two opposed processes, namely, “order from order” and “order from disorder.” Ilya Prigogine and his colleagues at the Free University in Brussels completed Schrödinger’s insight into a theory of nonequilibrium thermodynamics [11]. The Second Law admits for the emergence and existence of cyclic subsystems. This ranges from simple cycles within larger cycles, contained in still larger cycles. In a biological setting, this takes the form of structures ranging from simple cells to multicellular organisms, and beyond that to social systems consisting of multiple individual organisms. Such entities can only remain far from thermodynamic equilibrium through a permanent external input of exergy. The combination of all these cyclic processes and subsystems is crucial to the existence of life on planet Earth (and to the future of humankind, including your beloved pension fund).

The Second Law, in its basic form, implies that an isolated system—defined as having no exchange of energy and materials with outside systems—can exploit a flux of exergy to self-organize into a nested structured with multilayered subsystems. Examples are a star system, a solar system, and a planet. Under certain conditions, self-organization can occur by dissipating an exergy flux, which means converting the exergy to anergy. If the right ingredients are present, it is thus feasible to maintain an “island of stability and increasing order” far from Boltzmann’s thermodynamic equilibrium [12]. Such self-organized subsystems can survive as long as there is a permanent exergy input from another part of the overall system to compensate for local exergy dissipation. Self-organization can thus enable the creation and preservation of order, both in the form of complex material structures and as useful information or knowledge [13].

The formation and stability of such subsystems come at a cost of exergy while generating an increase in complexity. This has given rise to a new science about complexity, ranging from self-organization and far-from-equilibrium dynamics (e.g., [14]). While the mechanism for spontaneous creation of autocatalysis in chemicals is only partly understood, research on this is ongoing. Human organizations and institutions are also self-organized cycles, around information storage social organization—and technology development—in much the same way as biological organisms are organized around self-reproduction [15]. What is still not well understood is if complexity is good or bad for sustainability—and unfortunately there is hardly any research on this.

Complexity in economics has received meager attention [16]. It stresses that since agents are diverse, nonrational, possess incomplete information, innovate, and influence each other over idiosyncratic and changing social networks, the economy as a whole is never in a static equilibrium but shows volatile and emergent behavior. In addition, agent features, notably social interdependence, mean that economic dynamics are characterized by path dependence (unique historical patterns) and possibly lock-in, rather than flexibility and reversibility.

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Important to all complex system is that their structure was not arranged with a preconceived goal or through hierarchical or central planning and control, but the cumulative outcome of a set of unintended and unplanned processes. This holds equally true for the universe, a living organism, and the economy. The term self-organization is used in various disciplines and research areas, notably physics (especially thermodynamics), chemistry, biology, cybernetics, computer science, and the social sciences. In social systems, self-organization has been referred by some authors as “autopoiesis” [17]. Self-organization denotes that a higher-level structure arises out of a disorganized system of lower-level physical components due to spontaneous processes involving interactions between these components, hence the popular phrase “order out of chaos” [11]. The organization of such a higher-level structure is unplanned and decentralized, also referred to as “distributed control” or “self-regulation.” The macrostructure can comprise physical, chemical, biological, and economic arrangements or even coordination of behaviors and activities of agents in a larger system. Even markets have been proposed as being self-organized, namely, through the spontaneous organizing force of Adam Smith’s “invisible hand.” An entirely different example of self-organization is cellular automata that generate visual patterns or emergent structures like networks or groups—with applications to sustainability transitions [18]. Work on them illustrates that simple rules at the microlevel can produce surprising, emergent patterns at the macrolevel. To characterize in general terms the mechanisms underlying self-organization, one should note that it is driven by some type of gradient of exergy, matter, or information which causes associated currents, flows, or streams. For example, convection cells involve a temperature current, biological cells a nutrient flow, and social systems an information stream. A more abstract definition of self-organization is as a wide variety of complex processes at the “edge-of-chaos,” characterized by a trade-off between stability and flexibility [18]. The self-organized state is in between two extreme states: (1) a rigidly structured, ordered system with few connections and extreme stability but no flexibility; and (2) a random or chaotic system with many connections and extreme flexibility but no stability. In summary, there is a variety of viewpoints on complexity, related to notions such as energy and material use, energy gradients, energy and material transformation, exergy dissipation, entropy increase, information flows, self-organization, far-from-equilibrium processes, positive and negative feedback, bounded rationality and social interaction, lock-in and path dependency, irreversibility, and distributed control. As we will see in next sections, several of these concepts can be explored to understand the relationship between complexity and sustainability. 3. Sustainability Versus Complexity The relationship between complexity of the economy and environmental sustainability has received little attention in the literature on both environmental science and sustainability transitions. Regarding a static or existence theory, one could raise the question whether sustainability poses limits on complexity. The notion of “small is beautiful,” the belief in local communities, and the degrowth movement suggest an affirmative answer. Economics and innovation studies give more weight to scale economies and other increasing returns to scale, which—if scale and complexity are correlated—suggests a negative answer. Energy and climate studies stress unwanted side effects like rebound and leakage. From a dynamic angle, a relevant question is if the transition to a more sustainable economy involves mainly, or even steady, increases or decreases in system complexity. Resolving this will, in effect, help to clarify a transition theory informed about thermodynamics and complexity theory.

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There are different (explicit and implicit) views about how complexity and sustainability are connected. Hall et al. [19] argue that a minimum performance of energy sources is needed, in terms of what they call ERO(E)I or energy return on energy investment. Since renewables involve a complex production network and use diffuse wind, wave, or direct solar energy, they may not achieve this easily. Hence, it is uncertain if sustainability is feasible if societies are to maintain high material consumption levels. In fact, the authors claim that the only way for renewables to achieve a sufficiently high EROI is to be indirectly based on, i.e., being “subsidized by,” fossil fuels.

Historian and anthropologist Tainter [20] argues that responses to environmental and resource problems tend to increase “cultural complexity”—comprising the economy, politics, society, technology, and information. In turn, the economy requires more energy and material inputs, creating a dilemma or paradox of insolvability or even worsening of the problem. This goes somewhat against the common view of history as increasing economic complexity going hand in hand with progress. Instead, Tainter’s conclusion is that future sustainability, and hence societal stability and progress, may be compromised by increasing complexity of the economy. This issue is also of relevance to recent pleas for circularity as the main solution to unsustainability [21]. To achieve this, a sharp increase is needed in recycling and reuse which will create new loops that make production systems more complex. In addition, material-to-energy shifting will occur, due to, e.g., melting plastics or glass, collection and transport, and reuse of old products that are energy-intensive in the use phase; another possible impact is material rebound, e.g., when regulations prohibit shops to provide plastic bags to customers resulting in more plastic packaging of the products themselves, such as vegetables.

The energy-rebound effect can be seen as a special case of Tainter’s thesis, in that technological improvements (higher energy efficiency) in response to energy resource scarcity give rise to more intense use of the technology (e.g., driving a fuel-efficient care more frequently or over longer distances) or new expenditures (due to saving money along with energy). Moreover, with increased complexity, a system will have more channels available for rebound to occur, in turn contributing to a potentially higher overall rebound effect [22]. To understand why (some type of) rebound is a special case of system complexity, note the following regularities of it: improved energy efficiency relieves resource limits, in turn stimulating use of additional activities and technologies; energy-intensive general-purpose technologies—such as engines, batteries, light gear, computers, transport vehicles, or new composites and materials—will diffuse to distinct activities in production and use phases; some efficiency improvements will translate into more technological complexity, such as an extra cycle in engines and a hybrid engine (electric and fuel combustion), adding components for storing breaking energy, or providing insulation materials; and finally, there are production chain and lifecycle effects translating in what is sometimes called “embodied energy” of the final product or service. The systemic relevance of rebound was recently supported by an ambitious review of economy-wide rebound, indicating it to be higher than 50% and reaching in some cases 100% [23] as well as by an ambitious study for the US, France, Germany, Italy, and the UK, which found macro-rebound to range from 78% to 101% [24].

Tainter’s best-known work, “The Collapse of Complex Societies” (1988), examines the collapse of Maya and Chacoan civilizations, and of the Western Roman Empire. He analyzed the subject in terms of network theory, energy economics, and complexity theory. Tainter argues that sustainability or collapse of societies follows from the success or failure of problem-solving institutions and that societies collapse when their investments in social complexity and their energy subsidies reach a point of diminishing marginal returns. He recognizes collapse when a society involuntarily sheds a significant portion of its complexity. He argues that responses to environmental and resource problems increase “cultural complexity”—comprising the economy, politics, society, technology, and information. In turn, the economy requires more exergy and material inputs, creating a dilemma or paradox of insolvability or even worsening of the problem. Tainter’s conclusion is that future sustainability will depend on continued high levels of exergy consumption.

Tainter [25] states general propositions about how he sees the connection between complexity and sustainability:

1. Sustainability is an active condition of problem-solving, not a passive consequence of consuming less.

2. Complexity is a primary problem-solving tool, including problems of sustainability.

3. Complexity in problem-solving is an economic function, which can reach diminishing returns and become ineffective.

4. Complexity in problem-solving does its damage subtly, unpredictably, and cumulatively over the long term. Sustainability must, therefore, be a historical science.

5. Sustainability may require greater consumption of resources rather than less. One must be able to afford sustainability.

6. The members of an institution may resort to resiliency as a strategy of continuity only when the option of sustainability is foreclosed.

7. A society or institution can be destroyed by the cost of sustaining itself.

It is easy to concur with much of this. Opposing unsustainable behavior with a host of individual regulations and rules, new oversight institutions, etc. increases societal expenses without necessarily yielding effective and efficient solutions. Especially point 5 is concerning. Indeed, in the three historical cases, Tainter noted that the civilization collapsed because it ran out of energy.

There are several topics where specific questions can be asked that relate to both complexity and sustainability, such as

• Are fossil fuels essential to a complex economy—so far, even renewables are largely built and maintained with fossil fuel driven activity?

• Does carbon capture and storage make sense or is it a kind of perpetuum mobile going against the energy-conservation law of thermodynamics?

• Do certain sectors prevent a complete decarbonization: air travel, freight trucks, and insulation of houses

• Does solar PV need a decentralized approach (everyone a unique system on its roof) or a coordinated approach with a minimum level of scale economies?

• Is information and communication technology (including email and WhatsApp) overused and disproportionately causing environmental impacts? Note in this regard that users are not charged financial and environmental costs which allows for huge files (e.g., images) to be sent to (many) others without limit.

In summary, it is surprising that the fundamental question whether sustainability poses limits on complexity has been largely ignored in the immense literature on environmental science and sustainability transitions. Some approaches may be seen to answer it, but only very implicitly. For instance, the notion of “small is beautiful,” the belief in local communities, and the degrowth movement suggest simplification is a good strategy. Economics and innovation studies give more weight to scale economies and other increasing returns to scale, which—if scale and complexity are correlated—may suggest complexity is not a big concern. From a dynamic angle, a relevant issue is whether the transition to a more sustainable economy involves steadily increasing or decreasing system complexity, or instead a more random fluctuation rather than a trend. Addressing all the above questions may result in the construction of a theory about the relationship between complexity and sustainability.

4. Complexity Policy for Sustainability

The lesson of the previous sections is that one should redirect or possibly limit complexity where possible as it is likely to translate into more exergy use, more rebound channels, environmental problem shifting, and generally limited understanding and control by politicians. Some policy implications are as follows: design energy transitions that limit rebound by regulating the full scope of fossil fuel energy use; favor decentralized small-scale solutions over centralized infrastructures that necessarily mean distribution losses and more complexity (such as waste water treatment plants or electricity generation facilities); promote resource reduction over resource circularity especially in terms of plastics and metals; and make producers responsible for product life cycles.

A potentially negative insight of the thermodynamic tale of complexity is that both nature and economies tend to generate complexity without any preconceived plan. This in turn suggests that it may be difficult to avoid additional exergy use and environmental impact generated through creation and maintenance of socioeconomic complexity. On the other hand, there is a positive message too, namely, that considerable moderation of these effects seems possible, through policy approaches that limit complexity, as outlined hereafter.

To begin with, a systemic approach is required, both in terms of analysis and policy. A systemic framework and method can help to unfold complexity and its change. This involves assessing the indirect effects of well-intended strategies and policies, irrespective of whether these take the form of behavioral, technological, or institutional solutions. Such indirect impacts—including in the future without a clear time horizon—are inherent to complexity increases. In terms of systemic policy, one could think of incentives that discourage undesirable resource use or emissions (e.g., greenhouse gases) for the entire system. This will avoid that energy/carbon rebound and carbon leakage will occur, which would result in ineffective policy. Two instruments which can achieve this for energy use and CO2 emissions are cap-and-trade (emissions trading or carbon market) and taxation (levies or charges), with the first having the advantage of putting a hard limit on the system and endogenously producing a necessary price that regulates a large number of emitters (producers and consumers) so that their joint emissions remain exactly within the limit set by the cap [22]. Any complexity that adds to energy use or carbon emissions and can be avoided will then be automatically discouraged—unless reducing emissions through more complexity elsewhere is feasible and more efficient or cost-effective. In other words, one would shift between different subsystem complexities that perform differently in terms of the combination of emissions and costs—resulting in a kind of optimizing system complexity for sustainability. For other environmental impacts, no such simple policy solution exists—which suggests a policy mix to limit shifts from climate solutions to other environmental problems [26].

Generally, a systemic policy might comprise pricing other substances than merely GHGs and virgin materials to assure their optimal use and recycling from a long-term environmental perspective. There is a lot of talk about the circular economy nowadays, but it is difficult to achieve as systemic policy is lacking, and hence different aspects are insufficiently optimized for minimum environmental impact [21]. Among others, this requires incentivizing local recycling such as nutrient recovery from water and solid waste [27], which would significantly reduce the amount of fossil fuels currently used for the production of mineral fertilizers through the Haber–Bosch process as well as the extraction of phosphate, a nonrenewable and quickly depleting critical raw material.

### Transition---AT: Populism---2NC

#### High growth fuels populism through corruption and widening inequality---AND alt causes make resentment inevitable.

Velasco ’18 [Andrew; January 25; Dean of the School of Public Policy at the London School of Economics and Political Science; Project Syndicate, “Why Economic Recovery Won’t Defeat Populism,” https://www.project-syndicate.org/commentary/economic-recovery-effect-on-populism-by-andres-velasco-2018-01]

For people who view the surge in populism around the world as an aftershock of the global financial crisis, the answer is yes. As unemployment falls and middle-class incomes begin growing, the populist temptation will wither, or so they hope.

If only it were that simple.

Populist politicians who happen to be in office (think Donald Trump or pro-Brexit Tories) will claim credit for the recovery, and that will strengthen their political hand. But that is only a short-term phenomenon.

During the last few years, a lively debate has taken place between advocates of economic and political/social explanations of populism. The economic explanation emphasizes that in a world of widening economic inequality and stagnating middle-class incomes (here the United States is cited as Exhibit A), no one should be surprised if angry middle- and working-class voters turn to politicians who promise to reverse these trends.

The issue is far from settled, but even if the economic explanation is right, it does not follow that the current global recovery will make much of a political difference. If recent asset-price inflation is any indication of things to come (and note that real interest rates are likely to remain low for a very long time), growth could be of the kind that again disproportionately increases the income and wealth of the top 1%.

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Even in the best-case scenario, in which income distribution did begin to improve, one thing economists of all stripes agree on is that change would be glacially slow. Other factors that have plausibly stoked political upheaval – deindustrialization, loss of manufacturing jobs, stubborn pockets of unemployment in left-behind cities and regions – would also change very slowly, if at all. Even if the rising tide of recovery does lift all boats, as conservative economists like to say, it will not be enough to push many vessels clear of populist tempests.

That is also because many of the factors behind populism are non-economic. The first piece of evidence is that populist parties have gained mass support (if not power) in countries with relatively strong economic performance. This is true of developed countries like Germany and Sweden, and of emerging economies like the Philippines and Turkey.

As is frequently pointed out, populism is a style of politics that creates an “other” on which society’s ills can be blamed. In the left-wing variety, the “other” is the elite – whether economic, financial, or political. For right-wing populists, foreigners, immigrants, or ethnic and religious minorities serve the same purpose.

The phenomenon is far from new. Populism was widespread in the US in the late nineteenth century; twentieth-century European fascism was a variety of right-wing populism; and left-wing populism has of course been a feature of Latin American politics from Getúlio Vargas and Juan Domingo Perón decades ago to Cristina Fernández de Kirchner and Nicolás Maduro today.

Two factors have arguably facilitated the recent return of populism: accelerated cultural and social change, and the perceived corruption of established political elites.

Start with cultural and social change. Giants of sociology, like Émile Durkheim, Ferdinand Tönnies, and Georg Simmel, worried long ago that the transition from traditional to modern society undermined traditional support structures and left individuals feeling isolated and unhappy. Alienation was a result of modernization, not a symptom of its absence.

The lesson of earlier periods is that populism thrives in environments where longstanding sources of identity – for example, class or nation – have weakened. In rich countries, this weakening has happened as a result of cultural globalization and mass migration; in emerging countries, traditional roles and values are succumbing to rapid urbanization and the rise of a new middle class employed in industry or services.

In Latin American countries that have experienced fast economic growth over the last couple of decades, people tell pollsters that they live much better than their parents and that they expect their children to live even better still. Yet many of the same people report feeling alone and abused, think their society is unfair, increasingly distrust their neighbors, and claim to be disillusioned with democracy. It is upon such voters that populist mass movements are built.

This brings us to the other key factor underpinning support for populism: the declining legitimacy of political elites. It is impossible to understand Trump’s rise without recourse to the popular perception (correct or not) that many American politicians are in the pocket of greedy bankers. Arguably, the Five Star movement would not have gained so much strength in Italy if voters there.

#### Statistics deny the correlation.

Khazan ’18 [Olga; April 23; staff writer at The Atlantic citing Diana C. Mutz, University of Pennsylvania political scientist, "People Voted for Trump Because They Were Anxious, Not Poor," Atlantic, https://www.theatlantic.com/science/archive/2018/04/existential-anxiety-not-poverty-motivates-trump-support/558674]

For the past 18 months, many political scientists have been seized by one question: Less-educated whites were President Trump’s most enthusiastic supporters. But why, exactly?

Was their vote some sort of cri de coeur about a changing economy that had left them behind? Or was the motivating sentiment something more complex and, frankly, something harder for policy makers to address?

After analyzing in-depth survey data from 2012 and 2016, the University of Pennsylvania political scientist Diana C. Mutz argues that it’s the latter. In a new article in the Proceedings of the National Academy of Sciences, she added her conclusion to the growing body of evidence that the 2016 election was not about economic hardship.

“Instead,” she writes, “it was about dominant groups that felt threatened by change and a candidate who took advantage of that trend.”

“For the first time since Europeans arrived in this country,” Mutz notes, “white Americans are being told that they will soon be a minority race.” When members of a historically dominant group feel threatened, she explains, they go through some interesting psychological twists and turns to make themselves feel okay again. First, they get nostalgic and try to protect the status quo however they can. They defend their own group (“all lives matter”), they start behaving in more traditional ways, and they start to feel more negatively toward other groups.

This could be why in one study, whites who were presented with evidence of racial progress experienced lower self-esteem afterward. In another study, reminding whites who were high in “ethnic identification” that nonwhite groups will soon outnumber them revved up their support for Trump, their desire for anti-immigrant policies, and their opposition to political correctness.

Mutz also found that “half of Americans view trade as something that benefits job availability in other countries at the expense of jobs for Americans.”

Granted, most people just voted for the same party in both 2012 and 2016. However, between the two years, people—especially Republicans—developed a much more negative view toward international trade. In 2012, the two parties seemed roughly similar on trade, but in 2016, Hillary Clinton’s views on trade and on “China as a threat” were much further away from the views of the average American than were Trump’s.

Mutz examined voters whose incomes declined, or didn’t increase much, or who lost their jobs, or who were concerned about expenses, or who thought they had been personally hurt by trade. None of those things motivated people to switch from voting for Obama in 2012 to supporting Trump in 2016. Indeed, manufacturing employment in the United States has actually increased somewhat since 2010. And as my colleague Adam Serwer has pointed out, “Clinton defeated Trump handily among Americans making less than $50,000 a year.”

Meanwhile, a few things did correlate with support for Trump: a voter’s desire for their group to be dominant, as well as how much they disagreed with Clinton’s views on trade and China. Trump supporters were also more likely than Clinton voters to feel that “the American way of life is threatened,” and that high-status groups, like men, Christians, and whites, are discriminated against.

This sense of unfounded persecution is far from rare, and it seems to be heightened during moments of societal change. As my colleague Emma Green has written, white evangelicals see more discrimination against Christians than Muslims in the United States, and 79 percent of white working-class voters who had anxieties about the “American way of life” chose Trump over Clinton. As I pointed out in the fall of 2016, several surveys showed many men supported Trump because they felt their status in society was threatened, and that Trump would restore it. Even the education gap in support for Trump disappears, according to one analysis, if you account for the fact that non-college-educated whites are simply more likely to affirm racist views than those with college degrees. (At the most extreme end, white supremacists also use victimhood to further their cause.)

These why-did-people-vote-for-Trump studies are clarifying, but also a little bit unsatisfying, from the point of view of a politician. They dispel the fiction—to use another 2016 meme—that the majority of Trump supporters are disenfranchised victims of capitalism’s cruelties. At the same time, deep-seated psychological resentment is harder for policy makers to address than an overly meager disability check. You can teach out-of-work coal miners to code, but you may not be able to convince them to embrace changing racial and gender norms. You can offer universal basic incomes, but that won’t ameliorate resentment of demographic changes.

In other words, it’s now pretty clear that many Trump supporters feel threatened, frustrated, and marginalized—not on an economic, but on an existential level. Now what?

#### No nuclear populism impact.

Rajagopalan ’22 [Rajeswari Pillai; September 20; PhD, Resident Senior Fellow at the Australian Strategic Policy Institute; The Nonproliferation Review, "Rajeswari Pillai Rajagopalan, Director, Centre for Security, Strategy and Technology, Observer Research Foundation, New Delhi," vol. 28]

In their essay “Upsetting the Nuclear Order: How the Rise of Nationalist Populism Increases Nuclear Dangers,” Oliver Meier and Maren Vieluf highlight some important aspects of nationalist-populists’ decision-making styles and argue that they could lead to greater nuclear danger and undermine the global nuclear order. The authors also challenge the traditional notion of responsible and irresponsible nuclear-weapon states. These aspects of nationalist-populist leaders’ influence on nuclear decision making have not been studied in any detail before; the article thus represents an important contribution to the academic literature on nuclear decision making and nuclear danger. Despite its importance as a first cut, there are a number of drawbacks in the argument.

It is undoubtedly true that nationalist-populist leaders have shown a distinct attitude toward foreign and defense policies and choices. But whether this also impacts nuclear-weapons decision making is a bit more uncertain because that decision-making remains a significantly distinct arena for policy makers. More significantly, the choice of nationalist-populist leaders—former US President Donald Trump, UK Prime Minister Boris Johnson, Indian Prime Minister Narendra Modi, and Russian President Vladimir Putin—is questionable. That Chinese President Xi Jinping is not categorized as a nationalist-populist leader is surprising. While there may not be an electoral process that keeps Xi and the Chinese Communist Party (CCP) in power, Xi and the CCP appear conscious that the legitimacy of the party is maintained by the policies of Xi and his party. They have carefully used populism in pushing their policies, even if the manner in which Chinese public perceptions are managed may be different. Xi’s anti-corruption drive, for instance, was propelled primarily by careful use and nurturing of public anger. In foreign policy, the CCP has again carefully nurtured and managed public opinion to gain support for policy. The manner in which China responded to South Korea after the latter’s decision to deploy the American THAAD (Terminal High Altitude Area Defense) missile-defense system is a case in point: China aroused popular anger against South Korean supermarkets such as Lotte. Therefore, the authors’ suggestion that China does not “rely on an internal in-group versus out-group dichotomy to justify their leadership” may need to be reconsidered. The absence of Pakistan from the authors’ categorization of nationalist-populist leadership because the civilian leadership does not hold much influence in nuclear decision making is also puzzling because the military leadership in Pakistan has also been careful to nurture its role and use public opinion for both domestic and foreign-policy purposes. Meier and Vieluf's analysis essentially implies that a country with a democratic leader who has a populist style is far more dangerous than a country that has an authoritarian leader or has a military that controls nuclear weapons for narrow institutional reasons. As we see from the Russian invasion of Ukraine, as well as many other cases, such narrowly based leadership can potentially make far greater mistakes in foreign and security policies than democratic leaders whose popular base is much wider. In the Russian case, the issue may not as much be about populism as authoritarianism.

There has definitely been some loose talk about the use of nuclear weapons by nationalist-populist leaders, but the consequence of such loose talk should also not be exaggerated. For instance, Modi’s 2019 campaign was primarily focused on demonstrating that he was tough on national security by invoking India’s conventional military retaliation to Pakistan’s terrorist attacks without focusing on nuclear threats. In other words, threats of nuclear escalation were not characteristic of his “tough on national security” persona. There was only one offhand, oblique remark regarding nuclear weapons. Nevertheless, Indian analysts also have raised concerns about the statement from Prime Minister Modi in which he said that India was not keeping nuclear weapons “for Diwali” (an Indian festival that features firecrackers). Indian analysts such as the respected former foreign secretary Shyam Saran have criticized the reference, writing that any reference to nuclear weapons must be carefully made because it could otherwise lead to misinterpretation and misunderstanding among external observers.

But more significantly, there is little indication that such rare statements have led to any change in India’s nuclear strategy or nuclear posture, or led to a higher alert status. Moreover, potential adversaries did not respond to these as might be expected in a case of heightened nuclear danger. While loose talk about nuclear weapons is certainly not advisable, conflating that with rising nuclear dangers is exaggerated. In the cases of both Modi and Trump, we did not see any subsequent heightening of nuclear danger or any revelation of change in their respective nuclear postures. This suggests that the role and use of such rhetoric is to impress domestic audiences and that external actors understand it as such.

This is not to suggest that the threat of nuclear proliferation and heightening of nuclear dangers should be minimized. But there is no reason to exaggerate the threat either. This brings me to the point of evidence. Have we seen any new state pursuing nuclear weapons in response to such populist rhetoric? The answer is categorically negative. On the other hand, we have seen that other factors are pushing states to develop or acquire nuclear weapons—in particular, the increasingly aggressive behavior of some nuclear powers. For example, there is increasing discussion about and consideration of the nuclear-weapons option in countries such as Japan, South Korea, and even Saudi Arabia and Australia,Footnote1 all of which are being driven by actual security concerns as a consequence of aggressive behavior by countries such as China, North Korea, and Iran. The Ukraine crisis vividly illustrates why small states might be tempted to develop or acquire nuclear weapons. Similarly, China’s continued aggressiveness toward Taiwan could lead other currently non-nuclear-weapon states to consider nuclear weapons if China conducts a successful invasion of the island state. These would appear to be much more important and consequential drivers of nuclear decision making than the rhetoric of a few populist leaders who do not appear to be taken seriously.

Assertions by Meier and Vieluf about nationalist populist leaders’ greater reliance on nuclear weapons by linking populism to the 2018 US Nuclear Posture Review (NPR) are also potentially problematic. The reality is that NPRs have always been ideologically and politically controversial in the context of US domestic politics. There have been associated controversies about what goes in and what does not, but that happens irrespective of who the leader is and what kind of leadership the United States has at a particular point in time. So, for example, nuclear experts associated with Democrats have wanted a shift in US nuclear policy toward a no-first-use (NFU) policy, while those associated with the Republican party have wanted greater emphasis on nuclear weapons in US strategy. It is quite likely that even if a non-nationalist, non-populist Republican president had come to power in 2017, there would have been efforts to shift US nuclear policy toward greater emphasis on nuclear weapons. The unfortunate part is that nuclear policy has become somewhat politically partisan, but it may have nothing to do with Trump as a nationalist-populist leader.

Similarly, Meier and Vieluf argue that the Russian emphasis on nuclear weapons is the result of the influence of the Russian Orthodox Church, with the 2019 US Missile Defense Review as an additional factor. While both of these may play some role and could be used by Russia to legitimize the importance of nuclear weapons in its military strategy, a more important factor is Russia’s conventional military weakness, which has accentuated the importance of nuclear weapons. At best, these additional factors may bolster decisions that appear to have fairly easily understandable material roots in this weakness.

Questions about the credibility of America’s commitment to its alliance partners because of Trump’s repeated questioning of the relevance of the NATO or asking its East Asian partners to pay more for American protection reveal nothing more than Trump’s ignorance and crassness, and they have had relatively little real-world effect on US alliances. There have always been concerns among US allies about American commitments, but that is well known as a feature of alliance politics. It predates Trump and will remain a concern in the future. But the consequence is also easily judgeable, even if not measurable: US alliances have remained strong and are flourishing because their fundamental purpose is security, and security concerns are rising as a consequence of aggressive actors such as China and Russia. It is honestly difficult to look at the growing tightness of US alliances and partnerships in Europe and the Indo-Pacific today and correlate it with the concerns expressed in this essay.

Looking specifically at India’s nuclear doctrine, it is worth noting that there has been opposition to the NFU policy since the time India formally presented it in 2003. Nevertheless, Indian nuclear doctrine has not changed, and Indian officials have repeatedly reconfirmed the doctrine formally in multiple statements in a variety of international settings. The 2014 manifesto of Modi’s Bharatiya Janata Party promised a relook at India’s nuclear doctrine, but Modi himself backtracked on it fairly quickly after being elected. Though some analysts have suggested that India is developing capabilities that could lead to a counterforce doctrine, India's actual force development has been fairly sedate. India still maintains a slow-growing nuclear force that is slightly smaller than even Pakistan’s, which does not suggest that India is considering any such dramatic changes. While Modi may be a nationalist populist, this does not appear to be influencing Indian nuclear doctrine in any visible manner. Considering that he has been in power for almost a decade, this stability and consistency in Indian nuclear policy calls into question arguments about how nationalist populism could impact nuclear policy.

The consequences of nuclear-policy changes are grave, and we must be careful in assessing possible dangers. This might suggest that even minor indications of future changes be treated seriously, and the authors are correct to flag potential dangers from nationalist-populist leaders. Nevertheless, there is also a risk in exaggerating the danger. Most importantly, we must not ignore more important sources of nuclear danger and proliferation. In the contemporary world, this danger is rooted in aggressive authoritarian states that are increasing the insecurity of their smaller, weaker neighbors, thus leading to greater consideration of nuclear weapons for self-defense in East Asia and the Middle East. Focusing on the wrong danger may prove to be more problematic for nuclear stability.

#### No populist wars.

Destradi ’21 [Sandra; 2021; professor in political science at the University of Freiburg; Comparative European Politics, “Populism and Foreign Policy: A Research Agenda,” vol. 19]

Amenability to compromise

Among foreign policy observers and in the media, one common assumption about populist actors is that they will adopt a less compromising posture in foreign policy as compared to that of non-populist governments and, overall, anecdotal evidence tends to confirm this impression. In theoretical terms, different approaches to populism would also lead us to expect populists in power to pursue a more confrontational foreign policy as compared to their predecessors. Populists’ Manichean worldview, highlighted by the ideational approach (Hawkins 2009: 1043) will lead them to depict the world in highly moralistic terms, as a battle of good vs. evil, black vs. white. This, together with populists’ claim to be the only possible representatives and defenders of the ‘true people’ (Müller 2016: 3) might make them less amenable to compromise in international disputes. The literature on populism as a political style also highlights that populists will tend to conjure up crises (Moffitt 2017) and employ an antagonistic, rather than consensual discourse (Ostiguy 2017). Similarly, the discursive approach suggests that the populist logic of articulation rests on the permanent discursive construction of an ‘other’ or ‘enemy’, whether internal or external. This is likely to translate into a confrontational rhetoric towards (certain) other international actors and to shape antagonistic representations of identities. Finally, the politico-strategic approach highlights that populists, after forming governments, need to keep mobilizing their followers. International crises may be particularly suitable to generate domestic support, as is highlighted by the literature on the diversionary theory of war and the ‘rally around the flag effect’ (for an overview and a criticism of existing scholarship, see Tir 2010). Indeed, after they have themselves become part of the governing elite, populists need to keep constructing enemies. Yet, previous research suggests that shifts to populist governments do not automatically lead to foreign policies that are indiscriminately more conflictive or less amenable to compromise. Relying on operational code analysis, Özdamar and Ceydilek (2019) find that while European Populist Radical Right leaders tend to be more conflictual in their worldviews, they tend to be as cooperative as average world leaders when it comes to their ‘instrumental approaches’. Insights from the Global South suggest that populist governments will pursue a more conflict-prone foreign policy only vis-à-vis countries that are directly associated with a particular section of the population that populists exclude from their definition of the ‘true people’ (Destradi and Plagemann 2019). Finally, the picture is mixed as regard populist parties’ attitudes towards the use of force and intervening in other states’ internal affairs. In the realm of defence, their degree of support for military capabilities and solutions appear largely mediated by their thick ideologies and by national strategic cultures: for instance, most populist radical right party support higher defence spending while left-wing populist parties generally adopt pacifist postures, and while most populist parties tend to favour territorial defence, some support external force projection and military interventions against terrorist groups (Falkner and Plattner 2020; Coticchia and Vignoli 2020; Henke and Maher 2021; see also Wagner et al. 2018).

### Turns Case---War

#### Globalization causes resource competition---nuclear war.

Howe ’22 [Brendan; 2022; Dean and Professor at Ewha Woman’s University GSIS; Asian Journal of Peacebuilding, “Non-traditional Security Leadership and Cooperation in the Face of Great Power Conflict: The Rise of New Actors,” vol. 28]

Under such conditions, it is perhaps not surprising that great power rivalry between the US and China has intensified, almost to the extent of the struggle for global supremacy between the US and the USSR, albeit with more of a regional focus. Hence, David Shambaugh (2018, 85) has pointed out that despite their deep interdependence and elements of cooperation, the world’s two major powers are increasingly locked in a “comprehensive competitive relationship,” made explicit by the labeling of China and Russia as “strategic competitors” and “revisionist powers.” Nuclear weapons can be seen as the ultimate expression of power politics, and regional actors are prominent proponents. Russia and the US have the largest nuclear arsenals in the world, China’s complement ranks third, and North Korea has become only the ninth nuclear deterrent-enabled state in the world (Arms Control Association 2021). Japan, South Korea, and Taiwan could go nuclear virtually overnight, only refraining from doing so because of the shelter of the US nuclear umbrella.

In addition, so dramatic have been the impacts of controversies surrounding the administration of US President Donald Trump and its aftermath, that the American democratic polity can be viewed as being in crisis rather than a shining city on the hill, and therefore American soft power contributes less in terms of leadership resources in the region. President Trump’s attacks on international organizations (IOs), institutions, and multilateral treaties, revealed their limitations, raising the specter of the US walking away from any treaty, agreement, or institution that it considers not to be in the interests of US citizens. This turning away by the US has been particularly acute in the East Asian region, where only bilateral diplomacy could hold the attention of the previous president, and even then, only sporadically.

Even with the incoming administration of President Joe Biden there is no guarantee of a return of US leadership and contributions to peace and security in the region. At least initially, the Biden administration has signaled an intent to continue the tough line with China, while returning to something akin to the strategic patience of effectively doing nothing about North Korea. Furthermore, despite the much-vaunted “pivot to Asia” under President Barack Obama, the US neglected engagement with the region (beyond hedging over China). A revitalization of such policies, therefore, also bodes ill for regional leadership, especially given that President Biden has inherited so many other diplomatic challenges. In what may only be a one term presidency (even if he is succeeded by another Democrat), it is likely that, with the exception of the need to address China, Asia will once again be put on the back burner.

Neorealist-inspired coercive tactics have been prevalent in the international relations between the great powers and among other states as they attempt to structure the decision-making of the other, whether it be saber-rattling, namecalling, overt threats, or political and economic sanctions. Facing diverse challenges, successive governments in regional states have adopted state-centric national security policies with an emphasis on national sovereignty, territorial integrity, and national unity. The most extreme manifestation of this state centricity can be found on the Korean Peninsula where the two regimes, North and South, view each other as existential threats; across the Taiwan Strait, between the similarly mutually exclusive regimes of Beijing and Taipei; and in the state-centric security tensions very much in evidence in the East China Sea and South China Sea (Taylor 2018). Yet even between democratic allies of the US, such as South Korea and Japan, diplomatic relations can be strained at best, and take on power-political overtones.

Meanwhile, from a neoliberal perspective, throughout East Asia a premium has been placed on economic development, with rapid success in this field combined with high levels of industrialization, urbanization, and modernization across the region. Regional developmentalism has been labeled “econophoria,” whereby the solution to all governance challenges, whether domestic or international, is sought through the prioritization of economic growth (Buzan and Segal 1998, 107). In East Asia, state-centric macroeconomic development has been described as assuming “cult-like status” (Christie and Roy 2001, 5).

Economic development itself, however, does not automatically lead to an interdependence induced peace between states. Competition for limited pools of resources necessary for development raises the perspective of resource wars. Already tensions are high in the Mekong region of Southeast Asia due to hydroelectric dam construction along the river dramatically impacting the security of those living downstream. Tensions in the South China Sea are as much about marine resources and trade routes as they are about geopolitics. Recent tensions between Japan and South Korea, between the great powers China and the US, and between Russia and the European Union have been amplified by resource competition, trade wars, and economic sanctions.

Competition for markets among the export-orientated economies of East Asia can severely undermine incentives for cooperation between them. It can also impact on strategic policymaking, with lesser powers being caught between a dependence on the US-led Washington economic consensus and San Francisco hub-and-spokes security system, and a dependence on the Chinese market (Kim and Cha 2016). Finally, in the competitive rush to attract foreign direct investment (FDI) to rise up the development status ladder, countries in the region have mortgaged their autonomy, and thus a significant element of their traditional national security, first to the US, then after the 1997 Asian financial crisis, to the International Monetary Fund, and most recently, to the Chinese Belt and Road Initiative as manifested in the Asian Infrastructure Investment Bank (AIIB). There are concerns that AIIB activities could lead to as much insecurity as security promotion within the region (Uhlin 2019, 1).

#### Empirics AND asymmetry.

Haar ’20 [Edwin; 2020; former lecturer in international relations and political theory at Brown University, PhD from Maastricht University, MSc in International Relations from the London School of Economics and Political Science, and a MA in Political Science from Leiden University; Economics Affair, “Free trade does not foster peace,” vol. 40]

The most obvious rebuttal of these arguments is empirical. It just did not happen. Countries trading with each other, all around the globe, have fought wars with one another, over and over again. Some recent examples are Russia and Georgia, Russia and Ukraine, and Saudi Arabia and Yemen. As Smith predicted, human nature is an important factor in the explanation. People will quarrel and fight: ultimately emotions rule reason. In the domestic situation, there is hardly anyone who thinks that people can do without police and judiciary, because some people simply will not obey the rules. The international system is without a court with enforcement powers. There are some structural constraints, but it remains a human affair. The fundamental insights of Smith and his contemporaries into human behaviour do not amount to some oldfashioned idea, long refuted by modern science. They are confirmed not only by modern economists such as Kahneman (2011) and international relations specialists such as Waltz (1954, pp. 16–79) and Donelan (2007), but also by theorists working on the border between evolutionary psychology and international affairs (Rosen, 2005; Rubin, 2002; Thayer, 2004).

The relationship between trade and economic interdependence is also far more complex. Economic interdependence matters sometimes, but it cannot trump power politics. As Copeland (2015, pp. 1–50, 428–46) makes clear, economic interdependence is sometimes a constraint on violent action by a state. Yet it could just as well be a cause of violent action, especially of a pre-emptive nature in the event that actors expect to be cut off from trade and other economic resources in the near future. In this way, the benefits of continued trade lose out against the expected economic vulnerability. Sobek (2009, pp. 107–27) adds that trade relations might lead to uneven power relationships, which may be a cause of war as well.

Also relevant here is the fact that free trade does not normally result in bilateral interdependence, except for trade in the rarest goods. Free trade leads to multilateral trade relations, and consequently there may be more than one country where particular goods can be bought. Therefore, in times of war, it is relatively easy to switch to suppliers from country A to country B or C. In this way warfare may be a less costly option than is assumed by the idea of economic interdependence.

Public opinion is not automatically opposed to war, as Cobden painfully found out during the Crimean War (1853–56). This has been evident many times since, not least in the two world wars. So the idea of public opinion as a pacifying factor influencing decision-makers must be discarded. It must also be noted that the public in any case hardly ever influences foreign policy decisions on war and peace (Hill, 2003, pp. 250–82).

Trade is unable to foster peace, because it is unable to overcome many causes of war. Think about cultural and religious differences, geopolitical causes such as the fight for natural resources, including increasingly rare raw materials, or more traditional wars between great powers or their proxies over a border dispute. States may also act against their economic interest for some perceived higher goal (Coker, 2014). The causes of war are often multifaceted and complex. Wars happen because people have reasons to fight, in the form of goals and grievances, and possess enough resources and resolve (Ohlson, 2009). Trade relations are just one factor in the mix of causes of war, which include such coincidental factors as chance, luck, or reckless behaviour by individuals who happen to influence public policy. International commerce is simply not a “perfectly effective antiwar device” (Suganami, 1996, pp. 153–210). The best one can say is that the protection of trade relations is sometimes one of the factors in the decision not to wage war. Nothing less, nothing more.

To sum up, many of Adam Smith's arguments still stand, and are confirmed or complemented by modern research. There is no solid ground for the expectation that trade promotes, fosters, or leads to peace. Generally, international economic interests are not the crucial factors in decisions over war and peace. Too many other factors come into play. To believe that trade fosters peace was folly even hundreds of years ago. To still think so is to believe in fairy tales, to be blinded [confused] by the correlates computed by limited yet available datasets, or both.

#### Stochastic modelling proves.

Zeng ’20 [Yuleng; Spring 2020; assistant professor of international political economy at the University of Groningen; University of South Carolina, “Economic Interdependence, Power, and Peace: A Rationalist Study of Commercial Liberalism,” p. vi-vii]

To address these puzzles, I use three game theoretical models to examine the respective strategic interaction and then apply statistical analysis to test their empirical implications. First, I tackle the theoretical foundation of commercial peace and reexamine the two competing theories in this field: costly signaling and opportunity costs. Utilizing a crisis bargaining model, I theorize and demonstrate that the bargaining environment allows the two mechanisms to operate simultaneously: the bluffing incentive does not increase the likelihood of war because bluffers exploiting information asymmetry are simultaneously restrained by the coercive channel. Building on this understanding of two parallel mechanisms at work, the second chapter investigates how coercion and information interact beyond the stage of conflict onset. Using a war of attrition model, I show that states can intentionally choose to endure economic losses to demonstrate resolve. Whether this strategy is attractive or not depends on how much they value the disputed good, i.e., issue salience. As such, the effects of economic ties on conflict termination are conditional. When the issue salience is high enough, the signaling mechanism kicks in and incentivizes states to hold out longer. Otherwise, states in conflict should opt to cut their losses in time as the coercive mechanism dominates. Finally, I investigate how bilateral trade can affect the shift of power over time. Using a stochastic game, I demonstrate a scope condition under which trade can stoke, rather than restrain, conflicts. Specifically, when states’ relative efficiency of translating trade gains into military power is at the extremes, they have smaller incentives to initiate conflicts. However, when their efficiency moves closer to parity (bounded by existing military balance), increasing bilateral trade can exacerbate commitment problems, leading to a higher likelihood of costly conflict.

To test the above theories, I use relevant statistical tools, including structural estimation, survival analysis, and network analysis, to examine interstate trade and conflict data and find supporting results. I conclude that while economic interdependence promotes peace in a one-shot crisis bargaining situation, the strategic interactions become more involved as we account for the impact of time. Under certain conditions, states can be incentivized to hold out longer in conflict despite strong economic ties. As trade shifts power balance over time, countries can also willingly endure short-term economic pains for the potential benefits of long-term settlements. These findings further the existing theories in trade-conflict studies. They also hold important implications for economic coercion, power competition, and contemporary policy issues including the recent China-U.S. trade war.

#### No war from decline---the most robust datasets are NEG.

Boehmer ’23 [Charles and David Sacko; October 2023; Department of Political Science The University of Texas, El Paso; Department of Political Science, United States Air Force Academy, “Economic Growth’s Catalyzing Effect on War,” Defence and Peace Economics, Taylor & Francis Journals, vol. 34]

Most studies analyzing the effect of economic growth on military conflict or war originate theoretically with the state level of analysis. Various theories place emphasis on either the opportunity conditions to engage in war or the conditions that affect state willingness to engage in war, with certain studies considering both conditions. Concerning the opportunity to engage in war, some studies link the occurrence of war to economic expansions that provide war chests with which to finance conflict (Kuznets 1966; Kennedy 1987; Blainey 1988). In contrast, other findings argue it is not so much financial conditions that provide opportunities for war; instead, a higher propensity for war is a function of a higher degree of willingness to fight during economic expansions. Several authors link economic growth to optimistic or bellicose foreign policy moods that increase the willingness of states to go to war (Klingberg 1952, 1983; Kuznets 1966; Holmes 1985; Elder and Holmes 1985; Blainey 1988; Holmes and Keck 1999; Pollins and Schweller 1999). Blainey’s arguments are particularly relevant to our study given that his theory is general for all states and not just applicable to the major powers or the US. He notes, ‘While there may be no clear pattern to war, one “clue” we have is that optimism abounds at their onset (41).’ Boehmer (2010) provides evidence for this proposition after controlling for growth of military expenditures (war chest proposition), finding that economic growth increases the likelihood that states become involved in fatal militarized disputes and war. Recent scholarship further assesses the effects of economic growth on non-state violence (Choi 2015), concluding that industrial economic growth decreases the overall occurrence of terrorist incidences but increases the number of suicide attacks.

Choucri and North’s (1975) lateral pressure theory explains how growing states become driven domestically to expand in order to maintain economic growth. Such growth requires altering foreign policy in ways that increase the risk of conflict with other nations, such as through the push to acquire colonies and markets. Choucri and North use a series of simultaneous equations and case studies, finding that many endogenous relationships exist between population growth, GDP growth, colonies acquisition, military expenditures, and interstate conflicts. It might then be possible that the changes in foreign policy moods studied by some scholars correspond to periods of growth explained by lateral pressure theory.

Other studies predict that conflict is more likely during difficult economic times, but most consider conflicts at various levels of escalation and not just war. Diversionary conflict theorists predict that conflicts are more likely to occur during periods of economic stagnation and decline, or in response to other economic problems affecting society. The premise is that leaders gamble to stay in power by attempting to deflect attention away from economic troubles and toward a foreign enemy (Smith 1996). Still, the types of conflicts that may work the best as diversions are those that attract the attention of the populace but do not risk severe military defeat, which would increase the political problems for state leaders. Hence, conflicts short of war are probably more rational to incite for diversionary purposes. Nevertheless, clear exceptions exist in the literature, such as the Levy and Vakili (1992) claim that the Falklands/Malvinas War was diversionary in nature. Moreover, there are many variants of the theory, and some studies do not directly measure economic growth. Unemployment or price instability may be better measures, compared to GDP growth rates, of the economic problems that result in diversionary tactics. Additionally, much of this literature centers on the United States and may not be generalizable to other states (Ostrom and Job 1986; James and Oneal 1991; Morgan and Bickers 1992; DeRouen 1995; Hess and Orphanides 1995; Fordham 1998; Meernik 1994; Meernik and Waterman 1996; Mitchell and Moore 2002; Foster 2006). A handful of studies have examined cases of potential diversionary conflict besides the US case, such as Sobek (2007) on Renaissance Italy, Levy and Vakili (1992) on the Falklands/Malvinas War, and Sprecher and DeRouen (2002) on potential Israeli diversions.

Previous monadic studies offer theoretical innovation or empirical tests speaking to a broad sample of states, as opposed to just individual cases such as the US. Russett (1987) finds that negative growth rates lead to militarized conflicts and provides evidence (Russett 1990) that democracies, especially major powers, are more conflict prone during economic downturns – and diversionary behavior is the root of these empirical findings. However, these samples are limited primarily to developed states and could therein contain sample bias. Smith (1996) deductively shows how leaders faced with potential removal from office may gamble for political resurrection by using diversionary conflict. Other monadic-level studies provide evidence for heightened conflict during stagnant growth (Bloomberg and Hess 2002; Heldt 1999). However, Enterline and Gleditsch (2000) find no evidence that economic deprivation results in leaders attempting to externalize conflict. In a dyadic study, Leeds and Davis (1997) find no evidence that would directly support theories predicting diversionary behavior. They suspect this is because states that could become targets of diversion may not respond to such provocations, hence avoiding the militarization of conflicts. Foster (2006) similarly, finds that foreign opponents may shy away from conflict with the US when the latter’s presidents are politically vulnerable. Miller (1995) finds no evidence that low growth leads to diversions by democratic states, and later Miller (1999) supports the conclusions formed by Leeds and Davis (1997). However, Bennett and Nordstrom (2000) find that states in enduring rivalries are more prone to engage in military conflicts during periods of low economic growth. Still, verifying diversionary behavior in samples of aggregated states may not be possible. Economic growth may also be a poor indicator for situations where diversion possibly occurs. Other measures of misery or deprivation, such as inflation or unemployment, may be more directly associated with diversionary political tactics.

In sum, the literature on economic performance and conflict is rich but beset by various problems. First, there is a lack of commensurate research designs and data across studies over time, particularly among studies using different units of analysis. Second, most studies examine short-term growth but do not measure longer periods of growth. The examination of short-term growth is more conducive to testing theories of diversionary conflict than in testing other theories of economic growth and conflict. In contrast, those theories predicting that growth increases conflict focus on multiple years of growth. Third, most studies do not attempt to connect levels of analysis. Ideally, a theory at the domestic (monadic) level would explain the behavior of states in a manner observable at the interstate (dyadic) level of analysis, not to mention the regional and systemic levels as well. Dyadic designs may capture some strategic behaviors between two states, but most theories of growth and conflict start domestically as monadic processes. The goal should be first to show how monadic processes are observable in state behavior, but then how state behaviors affect interactions between states, potentially resulting in militarized conflicts. Regional context should also influence the strategic environment in which states’ foreign policies become more or less prone to militarized conflicts. States fight other states, and many of these conflicts remain bilateral. But decision-making within the strategic interactions between states will be influenced by other regional actors or even by systemic variables such as system structure. There is much reason then to suspect that economic growth may not have a simple and generalized effect on conflict that is captured by a single monadic, or even dyadic, measure. We can strengthen our research as a result, first by connecting levels of analysis theoretically and second by triangulating our tests of such theories by using multiple units and levels of analysis.

Theoretically Linking Economic Growth and Pressure Valves

The approach to studying the relationship between economic growth and war begins at the monadic level of analysis.3 Economic growth of a state can alter its foreign policy, resulting in an increased pursuit of resources and wealth toward the goal of internal political success. This pressure to become more active in the international system may occur as a need to maintain economic growth, which provides domestic legitimacy and stability to governments. Economic growth may further lead to the need to maintain that growth, generating foreign policies that seek out the addition of resources, the protection of territory, and the protection of trade routes and partners. Choucri and North (1975) discuss how characteristics of these same pressures influenced European imperialism and the occurrence of World War I. A similar pattern today is evident with Chinese domestic and foreign policies. Despite being an autocratic regime, the People’s Republic of China is still sensitive to the material advancement of its people, an outcome that provides the state some popular support and legitimacy, and thus a higher level of domestic stability. Ou-Yang and Zhou (2019) show that economic growth is important to the legitimacy of authoritarian states such as China and Vietnam. Chinese economic growth has also spurred a more interactive foreign policy that involves increases in military expenditures, including building a blue-water navy; extensive contracts and investments in regions far from East Asia, such as in Africa and Latin America; and assertion of territorial claims with its regional neighbors, especially in the South China Sea. Chinese efforts to combat pirates off the horn of Africa are also reflective of Chinese economic growth and its expanding international interactions. In fact, Campbell and Rapp-Hooper (2020) note that China’s recent assertiveness toward various disputes and territorial conflict – from its crackdown on Hong Kong to the armed skirmish with India – may represent not just opportunism during a more isolationist Trump administration, but that ‘there is reason to believe that a deeper and more lasting shift is underway. The world may be getting a first sense of what a truly assertive Chinese foreign policy looks like.’ This expansion of military activities and claims on territory are ingredients in the steps to war (Vasquez 1993; Senese and Vasquez 2008).

A Process Theory of War

We borrow from Bremer and Cusack’s (1995) process theory in a way to link such catalysts as economic growth and relief valves, factors that increase or decrease the temperature of disputes, as illustrated in Figure 1. Bremer and Cusack argue militarized interstate conflict is best understood by a process model that explicitly considers how factors might operate together and cognizes which factors might contribute to the onset of conflict. This interaction is an evolutionary process akin to a recipe operating across levels of analysis, to understand the conditions where the potential for a militarized interstate dispute, or war itself, is probabilistically higher. We begin with the monadic, or national-level, attributes. At the same time, we also model the dyadic interactions that affect state behaviors, along with regional factors that affect all relations in that sphere.

Economic Growth and the War Process

Economic development that increases wealth is the result of sustained economic growth over time. This economic growth likely coincides with, or is endogenously reinforced by, the acquisition of technology. This is an important distinction when considering the linkage between growth and conflict. Economic theories of diversionary conflict should be logically concerned with individual states’ short-term growth rates, especially negative shocks, and unconcerned with development and long-term economic growth.4 Theories relating to systemic long cycles of growth and conflict, especially linked to the rise and fall of hegemons or other major powers, are concerned with very long phases of growth. Such phases will look like developmental episodes, often measuring the global economy and conflict within the system. In between these types of theories are the propositions on war chests or foreign policy moods, which seemingly require intermediate spans of growth.

Economic growth rates affect war most directly between five to ten years. This is important for a few reasons. First, extended periods of growth have the most influence on foreign and economic policies. Trends of growth are noticeable to politicians and other decision-makers because they bring attention to the need for more resources required for growth to continue. Today, China is scouring the globe to obtain access for raw materials to feed its industries, particularly by investing in the infrastructures of developing states in Africa, Latin America, and Asia – even in Australia. States that are growing for extended periods begin to think about how to sustain such growth. In some circumstances, this drive for more resources may yield competition between states. Second, it takes time for leaders to recognize that their economy is in a growth trend. This means that while growth is happening, it will be unknown to leaders until bureaucrats and others in the private sector have data on which to act. This leads to lagged effects of growth in budgets that consequently affect behavior at some point after growth has occurred. Third, both the war chest and hubris (mood propositions) likewise require that growth occur over several years in order to affect decisions to go to war. Not only may leaders become more observant of long-term growth trends, citizens of growing states may also begin to feel a higher level of optimism about economic news. Both factors potentially lead to feelings of hubris, which may grow strongest as militarized conflicts escalate to high levels and stimulate public interest. Periods of economic growth may reflect the health of the state and society, representing ascendency, influence, and recognition. Whereas diversionary conflict studies argue that bad economic news may invite leaders to create diversions, our theory argues the opposite. Long-term growth actually increases the willingness of leaders, and often public opinion, to go to war through generating both higher levels of nationalism and an optimism about winning. As Blainey (1988, 54) found in his analysis, ‘Optimism may come from economic variables, the seasons, ideologies, and patriotism . . . Whatever their source, these moods permeate what appear to be rational assessments of the relative military strength of two contending powers.’ We argue that economic growth increases the risk of interstate conflicts escalating to war due to the influence of economic growth on such assessments of the risks of war.

Given that states generally have concerns for economic growth, we need to explain why some states may become more bellicose when they are growing as opposed to not growing. Low growth could alternatively provide a stronger influence on war. We can think of economic growth as providing increases in both the opportunity and willingness to war. Higher levels of economic growth may provide an increased opportunity for states to engage in war if they increase spending on military expenditures, or it more generally provides a stronger economic foundation and infrastructure for the future. However, the most direct effect of higher levels of growth appears to affect directly the willingness of states to escalate conflicts and fight wars. We expect that economic growth makes states more risk acceptant, and they become more willing to fight and risk escalation to war. Pollins and Schweller (1999) suggest growth affects state perceptions of their own strength and identity, increasing their optimistic calculation of the odds of winning wars; low growth operates in the opposite direction, even inducing increased isolationism. Extended periods of growth may increase nationalism and give states a sense that they can win wars, which may be unrelated directly to increases in military expenditures or military buildups. Feinstein’s (2016) experimental survey questions provide a useful example about how we can think about hubris, concerning the case of the United States (American moral and military superiority should result in more influence in the world; other governments should be like the US). We expect that these feelings of exceptionalism or hubris are generalizable to states, and that sustained, high economic growth rates help boost such sentiments. A stronger sense of optimism and nationalism, when combined with an expansive foreign policy, may increase the odds states will fight and not back down to threats, raising the odds of war.

#### DEFLECTION---leaders stop at rhetoric to quell nationalist sentiment.

Segev ’22 [Elad Segev, Atsushi Tago, and Kohei Watanabe; March 15; PhD, associate professor at the Department of Communication, Tel Aviv University; PhD, professor of International Relations at the School of Political Science and Economics at Waseda University; PhD, visiting scholar at Waseda University; International Interactions, "Could leaders deflect from political scandals? Cross-national experiments on diversionary action in Israel and Japan," vol. 48]

The diversionary theory of war is one of the best-known conflict initiation theories focusing on democratic leaders’ incentives. According to the theory, democratic leaders who face greater electoral challenges, either due to political scandals or an economic downturn, are more likely to choose provocative foreign policies and seek to lead the country into diplomatic crises, in hopes of inciting nationalistic sentiments that will boost their approval ratings via the so-called “rally around the flag” effect (e.g. Gaines Citation2002; Hetherington and Nelson Citation2003; Mueller Citation1973).

Despite the intuitive appeal of this theory, empirical studies have been largely unable to find consistent evidence to corroborate the purported theoretical mechanisms. Findings from observational studies have been quite mixed. The fact that a diverse set of findings have been reported from observational studies suggests that unobservable confounders arising from strategic interactions greatly hinder our ability to tease out the causal effect of electoral hardship on conflict behaviors.

In this research note, we claim that the key assumption of the theory does not work as expected. That is, a political leader cannot divert attention from his/her political scandals by emphasizing a foreign threat and alerting the general public that the country may go to war against an enemy. Although the assumptions that the threat or use of force is salient and that an acute enemy threat would create a rally-around-the-flag effect are common, they have rarely been tested at a micro-level in an experimental setting. Our team conducted a cross-national experiment to find out whether and how political leaders could divert the public’s attention away from their political scandals.

We selected Japan and Israel as fields of the experiment. Both are comparable parliamentary democracies that have witnessed a series of serious political scandals. Moreover, the general Japanese and Israeli public could plausibly expect a hawkish national security policy against the potentially nuclear-armed enemy states of North Korea and Iran, respectively, both of which are widely represented as “evil” and “mad” enemies.Footnote1 While we acknowledge that Japan and Israel have significantly different military cultures and distinct records of militarized interstate disputes, we consider them to be interesting, important, and comparable cases that could generate significant findings in testing the above-mentioned assumptions of diversionary war theory.

Our contribution is twofold. First, we confirm that, in both Japan and Israel, diverting public attention from salient political scandals would fail even if a political leader emphasizes the enemy threat or alerts the public to potential escalatory moves against the enemy. In particular, the most escalatory hawkish policy—a preemptive move—would not help the government hide its political scandals from the general public. Second, we found that, when we showed a (mock) news article predicting the prime minister’s hawkish policy (i.e. an escalation against a potentially nuclear-armed enemy), this would not directly lead to greater support for the prime minister compared to the mere emphasis on the threat level posed by the enemy. Just warning of an imminent threat from North Korea or Iran proves critical and sufficient to induce political support from the general public; we call this threat-induced political support.

#### No “use it or lose it” strikes.

Massa ’21 [Mark J. and Matthew Kroenig; June; MA, Security Studies, Georgetown University, associate director, Forward Defense practice, Scowcroft Center for Strategy and Security; PhD, Berkeley, Professor of Government at the Edmund A. Walsh School of Foreign Service at Georgetown University; Atlantic Council, Scowcroft Center for Strategy and Stability, “Are Dual-Capable Weapon Systems Destabilizing? Questioning Nuclear-Conventional Entanglement and Inadvertent Escalation,” https://www.atlanticcouncil.org/in-depth-research-reports/issue-brief/are-dual-capable-weapon-systems-destabilizing/]

While superficially plausible, closer examination reveals that “use it or lose it” rests on a weak logical foundation and does not, in fact, provide rational incentives to use nuclear weapons for three reasons.19

First, “use it or lose it” is a false dilemma. A false dilemma is a common logical fallacy that occurs when one is presented with a choice between two unattractive options when, in fact, there are more than two options available. The false dilemma presented by “use it or lose it” is that leaders with vulnerable nuclear forces have a choice between either using their nuclear weapons or losing them. Rarely, if ever, however, in international politics, do leaders face a choice between suffering a disarming attack and launching an intentional nuclear attack of their own. They have many other options. They can surrender. They can conduct diplomacy. They can retaliate with conventional military force. They can launch a nonnuclear strategic attack, such as in space or cyberspace. They could take other steps to ensure the survivability of their forces, such as to flush submarines to sea, place nuclear-armed bombers on alert, or activate mobile missile forces. They can engage in nuclear brinkmanship, raising the risk of nuclear war through nuclear alerts or veiled nuclear threats in the hope that the other side will back down. Intentionally launching a nuclear first strike is not the only, or even the most obvious, response for a state that fears it might become the victim of a disarming attack.

### Terror---2NC

#### No terrorism impact. Bathtubs have a higher kill count.

Mueller ’21 [John and Mark G. Stewart; 2021; PhD, Professor Emeritus of Political Science at Ohio State University and Senior Fellow at the Cato Institute; PhD, Professor of Civil Engineering and Director of the Centre for Infrastructure Performance and Reliability at the University of Newcastle in Australia; international leader in risk assessment, public policy decision-making, and protective infrastructure for extreme hazards; Terrorism and Political Violence, “Terrorism and Bathtubs: Comparing and Assessing the Risks,” vol. 33, DOI: 10.1080/09546553.2018.1530662]

The likelihood that anyone outside a war zone will be killed by an Islamist extremist terrorist is extremely small. In the United States, for example, some six people have perished each year since 9/11 at the hands of such terrorists—for an annual fatality rate of about one in 50 million for the period.

This might be taken to suggest, as one writer has characterized it, that “terrorism is such a minor threat to American life and limb that it’s simply bizarre—just stupefyingly irrational and intellectually unserious—to suppose that it could even begin to justify the abolition of privacy rights as they have been traditionally understood in favour of the installation of a panoptic surveillance state.”1 And terrorism specialist Marc Sageman characterizes the threat terrorists present in the United States as “rather negligible.”2 The vast majority of what is commonly tallied as terrorism has occurred in war zones, and this is especially true for fatalities.3 But even this has been exaggerated by conflating terrorism with war: civil war violence that would previously have been seen to be acts of insurgency are now often labeled terrorism.4

In order to put the numbers in some context, it has often been pointed out that far more Americans are killed each year not only by such highly destructive hazards as drug overdoses or automobile accidents, but even by such comparatively minor ones as lightning, accident-causing deer, peanut allergies, or drowning in bathtubs. Some comparisons are arrayed in Table l.

In recent years, however, critics have attacked what they call "the bathtub fallacy."

First, they stress that it is important to keep in mind that bathtubs are not out to kill you while terrorism is a willful act carried out by diabolical, dedicated, and clever human beings. Thus, although the number of people Islamist terrorists have been able to kill in the West since 9/11 has thus far been quite limited, those terrorists, as they plot and plan and learn from experience, may very well become far more destructive in the future.

Second, the critics charge that the comparison of terrorism with bathtub drownings is incomplete in that it doesn't consider the possibility that the incidence of terrorist destruction is ow precisely because counterterrorism measures are so effective.

Third, it is argued that, unlike bathtub drownings, terrorism exacts costs far beyond those entailed in the event itself. It damagingly sows terror, fear, and anxiety; disturbs our psychological well-being; undermines trust and openness within the society; and reduces our sense of intrinsic moral worth even as it increases a sense of helplessness.

They maintain, fourth, that the comparison is invalid because, unlike terrorism, bath tubs provide benefit.

And finally, they contend that terrorism costs are peculiarly high, particularly in a democratic society, because the fears it generates will necessarily need to be serviced by policy makers, and this pressure forces, or inspires, them to adopt countermeasures, both foreign and domestic, that are costly and sometimes even excessive.

In this article, we examine these five propositions and find all of them to be wanting. In the process, we conclude that terrorism is rare outside war zones because, to a substantial degree, terrorists don’t exist there. In general, as with rare diseases that kill few, it makes more policy sense to expend limited funds on hazards that inflict far more damage.

Terrorism is willed and may well become more destructive

Journalist Jeffrey Goldberg has suggested that “the fear of terrorism isn’t motivated solely by what terrorists have done, but what terrorists hope to do.” Bathtubs are simply not “engaged in a conspiracy with other bathtubs to murder ever-larger numbers of Americans.” However, terrorists “in the Islamist orbit,” he insists, “seek unconventional weapons that would allow them to kill a far-larger number of Americans than died on Sept. 11.”6 Or as Janan Ganesh of the Financial Times puts it, “Bathroom deaths could multiply by 50 without a threat to civil order. The incidence of terror could not.”7

Thus far, 9/11 stands out as an extreme outlier: scarcely any terrorist act, before or after, in war zones or outside them, has inflicted even one-tenth as much total destruction. That is, contrary to common expectations, the attack has thus far been an aberration, not a harbinger.8 And al-Qaeda central, the group responsible for the attack, has, in some respects at least, proved to resemble President John Kennedy’s assassin, Lee Harvey Oswald—an entity of almost trivial proportions that got horribly lucky once. The tiny group of perhaps 100 or so does appear to have served as something of an inspiration to some Muslim extremists. They may have done some training, may have contributed a bit to the Taliban’s far larger insurgency in Afghanistan, and may have participated in a few terrorist acts in Pakistan. In his examination of the major terrorist plots against the West since 9/11, Mitchell Silber finds only two—the shoe bomber attempt of 2001 and the effort to blow up transatlantic airliners with liquid bombs in 2006—that could be said to be under the “command and control” of al-Qaeda central (as opposed to ones suggested, endorsed, or inspired by the organization), and there are questions about how full its control was even in these two instances, both of which, as it happens, failed miserably.9 And, although some al-Qaeda affiliates have committed substantial damage in the Middle East, usually in the context of civil wars, their efforts to carry out terrorism in the West have been rare and completely ineffective.10 Even under siege, it is difficult to see why al-Qaeda could not have carried out attacks at least as costly and shocking as the shooting rampages (organized by other groups) that took place in Mumbai in 2008 or at a shopping center in Kenya in 2013. Neither took huge resources, presented major logistical challenges, required the organization of a large number of perpetrators, or needed extensive planning.

However, there is of course no guarantee that things will remain that way, and the 9/11 attacks inspired the remarkable extrapolation that, because the terrorists were successful with box cutters, they might soon be able to turn out weapons of mass destruction— particularly nuclear ones—and then detonate them in an American city. For example, in his influential 2004 book, Nuclear Terrorism, Harvard’s Graham Allison relayed his “considered judgment” that “on the current path, a nuclear terrorist attack on America in the decade ahead is more likely than not.”11 Allison has had a great deal of company in his alarming pronouncements. In 2007, the distinguished physicist Richard Garwin put the likelihood of a nuclear explosion on an American or European city by terrorist or other means at 20 percent per year, which would work out to 91 percent over the eleven year period to 2018.12

Allison’s time is up, and so is Garwin’s. These oft-repeated warnings have proven to be empty. And it is important to point out that not only have terrorists failed to go nuclear, but as William Langewiesche, who has assessed the process in detail, put it in 2007, “The best information is that no one has gotten anywhere near this. I mean, if you look carefully and practically at this process, you see that it is an enormous undertaking full of risks for the would-be terrorists.”13 That process requires trusting corrupted foreign collaborators and other criminals, obtaining and transporting highly guarded material, setting up a machine shop staffed with top scientists and technicians, and rolling the heavy, cumber some, and untested finished product into position to be detonated by a skilled crew, all the while attracting no attention from outsiders.

Nor have terrorist groups been able to steal existing nuclear weapons—characteristically burdened with multiple safety devices and often stored in pieces at separate secure locales—from existing arsenals as was once much feared. And they certainly have not been able to cajole leaders in nuclear states to palm one off to them—though a war inflicting more death than Hiroshima and Nagasaki combined was launched against Iraq in 2003 in major part under the spell of fantasies about such a handover.14

More generally, the actual terrorist “adversaries” in the West scarcely deserve accolades for either dedication or prowess. It is true, of course, that sometimes even incompetents can get lucky, but such instances, however tragic, are rare. For the most part, terrorists in the United States are a confused, inadequate, incompetent, blundering, and gullible bunch, only occasionally able to get their act together. Most seem to be far better at frenetic and often self-deluded scheming than at actual execution. A summary assessment by RAND’s Brian Jenkins is apt: “their numbers remain small, their determination limp, and their competence poor.”15 And much the same holds for Europe and the rest of the developed world.16 Also working against terrorist success in the West is the fact that almost all are amateurs: they have never before tried to do something like this. Unlike criminals they have not been able to develop street smarts.

Except perhaps for the use of vehicles to deliver mayhem (though this idea is by no means new in the history of terrorism), there has been remarkably little innovation in terrorist weaponry or methodology since 9/11.17 Like their predecessors, they have continued to rely on bombs (many of which fail to detonate or do much damage) and bullets.1

#### Terrorism is empirically exaggerated and conventional response solves.

Mueller ’24 [John; September 10; PhD, Professor Emeritus of Political Science at Ohio State University and Senior Fellow at the Cato Institute; Foreign Affairs, "Don’t Hype the Terror Threat," https://www.foreignaffairs.com/united-states/dont-hype-terror-threat?check\_logged\_in=1]

But the country has heard such alarms many times before, and they have proved unjustified. This was particularly true, of course, in the aftermath of the 9/11 attacks. In those years, Morrell and Allison sometimes joined the chorus of concern. Morell, who was the CIA official in charge of briefing the U.S. president at the time of the 9/11 attacks, recalled the atmosphere vividly in a book he wrote in 2015. “We were certain we were going to be attacked again,” he wrote, a conclusion supported by “thousands of intelligence reports.” In a 2004 book, Allison concluded that “on the current path, a nuclear terrorist attack on America in the decade ahead is more likely than not.”

Morrell and Allison were hardly alone. As Jane Mayer observed in her book The Dark Side, “The only certainty shared by virtually the entire American intelligence community in the fall of 2001 was that a second wave of even more devastating terrorist attacks on America was imminent.” Rudolph Giuliani, New York City’s mayor at the time, remarked later that any security expert would have concluded that “we’re looking at dozens and dozens and multiyears of attacks like this.”

In 2002, U.S. intelligence officials were telling reporters that there might be up to 5,000 operatives trained abroad by al Qaeda inside the United States. After a few years of intensive sleuthing, the FBI found no al Qaeda cells at all in the country. But the agency’s director, Robert Mueller, was not assuaged, telling a Senate committee in 2005 that he was “very concerned about what we are not seeing.”

In 2003, John Negroponte, the U.S. ambassador to the United Nations, claimed that there was “a high probability that Al Qaida will attempt an attack using a [biological, chemical, radiological, or nuclear] weapon within the next two years.” Later that year, U.S. Attorney General John Ashcroft publicly warned that “al-Qaeda plans to attempt an attack on the United States in the next few months,” that it would “hit the United States hard,” and that preparations for such an attack might be 90 percent complete. No such assaults ever materialized, of course: indeed, after the 9/11 attacks, al Qaeda never managed to carry out another major strike on the U.S. homeland.

Even after the 2011 U.S. raid in Pakistan that killed the al Qaeda chief Osama bin Laden, experts continued to hype the threat the group posed. In the wake of bin Laden’s death, the political scientist Bruce Hoffman predicted that the raid would lead to “acts of retribution, vengeance, frustration and punishment” directed at the United States. The scholar John Arquilla, meanwhile, contended that any “lack of ‘spectaculars’” in attacks al Qaeda carried out after bin Laden’s death “should not be seen as a sign of a weakening al Qaeda, but rather as an indicator of a shift in strategy.”

Evidence seized in that raid, however, strongly suggested that the central al Qaeda organization was little more than an empty shell, harassed by U.S. drone strikes and starved of funds. In the words of the al Qaeda expert Nelly Lahoud, by that point, the group had become notable mainly for its “operational impotence.”

Al Qaeda did inspire would-be jihadis in the United States, and its quasi-successor, the Islamic State (also known as ISIS), inspired even more during its heyday from 2014 to 2017. In the two decades after 9/11, some 125 plots by Islamist extremists targeting the United States were either carried out or were disrupted by the authorities. (Many of the latter were in embryonic stages.) In total, these resulted in the deaths of about 100 people—about five per year, on average. The deaths were tragic, of course, but scarcely monumental; consider that on average, more than 300 Americans die every year from drowning in bathtubs.

THE CURRENT SITUATION

Despite the dire official warnings that Allison and Morrell cite, it is not at all clear that the threat to the United States from international terrorism has increased of late. There continue to be jihadi plots, but the authorities have managed to roll them up with familiar tactics. For example, a recent effort from Iran to enlist someone in the United States to assassinate John Bolton, who served as national security adviser in the Trump administration, was foiled by the FBI.

It is true that jihadi organizations around the world urge like-minded Americans into action, but this is scarcely new. Twenty years ago, bin Laden and other al Qaeda operatives were given loudly to proclaim that the United States “needs further blows” and warned that they could come at any moment. For the most part, however, such blows failed to materialize.

Wray and others are concerned that terrorists will join the large numbers of migrants who illegally cross the U.S.-Mexican border. Yet of the hundreds of millions of foreign visitors who were admitted legally into the United States in the two decades after 2001 and the millions more who entered illegally, few if any were agents smuggled in by al Qaeda or ISIS. In recent years, some migrants seeking entry have shown up among the two million names in the FBI’s terrorism watch list, but this seems to reflect the fact that the list itself is overly inclusive rather than suggesting constant attempts by jihadis to penetrate the U.S. homeland.

Meanwhile, there has been a great deal of outrage worldwide over American complicity in Israel’s destructive response to the vicious Hamas raid. But nearly a year later, that anger has yet to produce the increase in terrorist activity in the United States that Wray and others have cited as a potential threat.

More generally, the post-9/11 experience suggests that despite official alarm, even if such an increase did occur, it would be manageable without extraordinary actions. Allison and Morrell, however, call for significant policy steps: a review of “all previously collected information related to terrorism,” the use of “national emergency authorities” to prevent terrorists from entering via the southern border, and stepped-up covert U.S. actions all over the world to disrupt jihadi groups. In reality, there is little reason to believe that such measures are necessary.

#### Terror is fake.

Mueller ’20 [John; May 6; Professor of Political Science and Senior Research Scientist with the Mershon Center for International Security Studies at Ohio State University, Senior Fellow at the Cato Institute, PhD from the University of California, Los Angeles; Cato Institute, “Assessing International Threats During and After the Cold War,” https://www.cato.org/publications/study/assessing-international-threats-during-after-cold-war]

In the decade after the Cold War, a similar process of threat identification took place as problems previously considered to be of minor, or at least of secondary, concern were promoted. Anxieties about international terrorism substantially increased during the 1990s and were set into highest relief with the terrorist attacks of September 11, 2001. Extrapolating wildly from 9/11, a terrorist event ten times more destructive than any other in history, terrorism of that sort has repeatedly been taken to present a direct, even existential, threat to the United States or to the West — or even to the world system or to civilization as we know it.6 Wild extrapolations have precipitated costly antiterrorism and antiproliferation wars and huge increases in security spending. In these ventures, trillions of dollars have been squandered and well over two hundred thousand people have perished, including more than twice as many Americans as were killed on 9/11.7 There has been a tendency to see these exercises as misguided elements of a coherent plan to establish a “liberal world order” or to apply “liberal hegemony.”8 However, the overwhelming impetus was far more banal: to get the bastards responsible for 9/11.

Islamist terrorism in the United States has killed some six people per year since 9/11, and far more people in Europe perished yearly at the hands of terrorists in most years in the 1970s and 1980s.9 But there has nonetheless been a tendency to continue to inflate al-Qaeda’s importance and effectiveness.

In fact, al‐​Qaeda Central has done remarkably little since it got horribly lucky in 2001. It has served as something of an inspiration to some Muslim extremists, has done some training, seems to have contributed a bit to the Taliban’s far larger insurgency in Afghanistan, and may have participated in a few terrorist acts in Pakistan. It has also issued a considerable number of videos filled with empty, self‐​infatuated, and essentially delusional threats.10 Even isolated and under siege, it is difficult to see why al‐​Qaeda could not have perpetrated attacks at least as costly and shocking as the shooting rampages (organized by others) that took place in Mumbai in 2008, in Paris in 2015, or in Orlando and Berlin in 2016. And, although billions of foreigners have entered legally into the United States since 2001, not one of these, it appears, has been an agent smuggled in by al‐​Qaeda. The exaggeration of terrorist capacities has been greatest in the many overstated assessments of their ability to develop nuclear weapons. In this, it has been envisioned that, because al‐​Qaeda operatives used box cutters so effectively on 9/11, they would, although under siege, soon apply equal talents in science and engineering to fabricate nuclear weapons and then detonate them on American cities.11

It is possible to argue, of course, that the damage committed by jihadists in the United States since 9/11 is so low because “American defensive measures are working,” as Peter Bergen puts it.12 However, although security measures should be given some credit, it is not at all clear that they have reduced the amount of terrorism significantly. There have been scores of terrorist plots rolled up in the US by authorities but, looked at carefully, the culprits left on their own do not seem to have had the capacity to increase the death toll very much.13 As Brian Jenkins puts it, “Their numbers remain small, their determination limp, and their competence poor.”14 Nor can security measures have deterred terrorism. Some targets, such as airliners, may have been taken off the list, but potential terrorist targets remain legion.15 To a considerable degree, terrorism is rare because as Bruce Schneier puts it bluntly, “there isn’t much of a threat of terrorism to defend against.”16

#### No nuke terror---no interest AND too complex.

Mueller ’22 [John; 2022; Woody Hayes Chair of National Security Studies at the Mershon Center for International Security Studies, Professor Emeritus at Ohio State University; CATO Institute, “Nuclear Proliferation,” https://www.cato.org/cato-handbook-policymakers/cato-handbook-policymakers-9th-edition-2022/nuclear-proliferation]

The Prospects for Atomic Terrorism

Alarm about the possibility of nuclear weapons proliferating to terrorists has been raised repeatedly over the decades. In the wake of 9/11, many commentators were predicting that terrorists might well set one off by 2014.

Alarm has tapered some in recent years because it has become increasingly evident that terrorist groups have exhibited only limited desire and even less progress in going atomic. Perhaps, after a brief exploration of the possible routes, they have discovered that the tremendous effort required is scarcely likely to succeed.

One route a would‐​be atomic terrorist might take would be to receive or buy a bomb from a generous, like‐​minded nuclear state for delivery abroad. That route, however, is highly improbable. The risk would be too great—even for a country led by extremists—that the source of the weapon would ultimately be discovered. Moreover, the weapon could explode in a manner or on a target the donor would not approve—including, potentially, on the donor itself.

Some observers have worried about “loose nukes,” weapons that can be stolen or bought illicitly. However, Younger’s observation remains relevant: nuclear nations are very serious about the security of their weapons. Moreover, finished bombs are usually outfitted with safety devices that are difficult to defeat.

Most analysts believe that a terrorist group’s most promising route would be to attempt to make a bomb using purloined fissile material—plutonium or highly enriched uranium. However, as the Gilmore Commission—an advisory panel on terrorism and weapons of mass destruction—stressed in 1999, building and deploying a nuclear device presents “Herculean challenges.” As it noted, the process requires a lengthy sequence of steps; if each is not fully met, the result is not simply a less powerful weapon but one that can’t produce any significant nuclear yield at all or can’t be delivered.

Physicists who have studied the issue conclude that fabricating a nuclear weapon “could hardly be accomplished by a subnational group” because of “the difficulty of acquiring the necessary expertise, the technical requirements (which in several fields verge on the unfeasible), the lack of available materials and the lack of experience in working with these.” Others stress the “daunting problems associated with material purity, machining, and a host of other issues” and conclude that the notion that a terrorist group could fabricate an atomic bomb or device “is farfetched at best.”

The notion that terrorists could come up with a nuclear weapon seems remote. As with nuclear proliferation to countries, there may be reason for concern, or at least for interest and watchfulness. But alarm and hysteria are hardly called for.

#### No existential terrorism.

Kallenborn ’23 [Zachary and Gary Ackerman; adjunct fellow with the Center for Strategic and International Studies, policy fellow at the Schar School of Policy and Government, fellow at the National Institute for Deterrence Studies; PhD, Associate Professor and Associate Dean in the College of Emergency Preparedness, Homeland Security and Cybersecurity of the University at Albany; European Journal of Risk Regulation, “Existential Terrorism: Can Terrorists Destroy Humanity?” vol. 14, https://doi.org/10.1017/err.2023.48]

Overall, we conclude that several plausible pathways exist for terrorists to destroy human civilisation, although the likelihood at present of any of them is very low. Within the bounds of feasibility (sometimes barely so), terrorists could conceivably develop genetically engineered microbes, catalyse nuclear war or, in the future, utilise novel technologies like ASIs and nanorobotics to carry out existential attacks. However, in the near to medium term, this is likely to require significant amounts of technical and scientific expertise and resources, far beyond a typical (or even state-sponsored) terrorist organisation. Of course, future technological advances– artificial intelligence and rapid prototyping are noteworthy examples– and other factors may lower the barriers considerably. Alternatively, and far more concerning, is the potential for terrorists to spoil existential risk-mitigation measures, such as disrupting planetary defence missions. However, the effectiveness of such attempts would be dependent on an impending existential harm manifesting through other means and is thus highly contingent on extraneous conditions. The contingency dependence is again high for causing systemic harm that undermines the ability to deal with other existential risks. Like high capability thresholds, high contingency thresholds also imply lower likelihood overall.